NARRATIVE AND EXPLORATION IN SMALL MUSEUMS:

THE WALLACE COLLECTION AND THE SOANE MUSEUM

BY

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ABSTRACT

This paper sets out to study the effects of multiple visibility on the interface between the exhibition and the visitor in private collection museums. By multiple visibility, what is meant is the situation where the visitor perceives different spaces and objects simultaneously and in different ways. In this way, as the visitor moves in the museum, there is a constant flow of object from the background to the foreground and vice – versa. The case studies selected for this report are the Wallace Collection and the Soane Museum, both housed in the 18th century residences of the collectors, in central London.

The analysis is done within the theoretical framework known as space syntax, and the respective methodology and analytical tools. It reveals that while in the Wallace Collection the structure of the space is based on choice of movement, in the Soane Museum it is the visual effects that play the prominent role in defining the visitors' experience. The former is a space for moving around, while the latter is one for looking around.

Key words:
Space syntax, London, Museum, visibility.

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1. INTRODUCTION

This paper sets out to conduct a comparative syntactic analysis of two London private collection museums, formed mainly in the 19th century, the Wallace Collection and the Soane Museum. The two museums present certain similarities. They were both the residences of the collectors, who made alterations to the buildings in order to accommodate an art collection. The Soane museum was already open to the public as a museum before Soane's death, and the Wallace Collection, although formally open as a museum after Wallace's death, attracted a significant amount of visitors already as a private residence.

The two museums, although contemporaneous, represent altogether different approaches to art and ways of exhibiting it. The Wallace Collection is housed in Hertford House (fig.1.1), the mansion of the 4th Marquess of Hertford, later inherited by his son, Sir Richard Wallace, who made alterations to the building in order to accommodate his father's collection. The collection consists, among others, of significant paintings and objects from the sixteenth to the nineteenth century, an oriental and European armoury collection, and Baroque and Rococo furniture, china and small objects. All these are items of

Figure 1.1: The Wallace Collection, exterior and interior views (photos by author)

luxury, ones that a noble man would be able, and expected, to afford and acquire, in order to amaze his visitors and establish a high social and cultural status, in the manner of the princely collection described in the following chapter. In the building, the rooms are large, decorated with luxurious wallpapers, curtains and furniture of elaborate designs. On the walls there are paintings with impressive frames and fireplaces with large mirrors. All the materials used demonstrate wealth and the era's good taste.

The Soane Museum, at Nos. 12, 13 and 14 Lincoln's Inn Fields (fig.1.2), presents the lifelong creation of Sir John Soane, London's prominent architect of the 19th century, professor of the Royal Academy of Arts and famous for building the Bank of England. Soane bought and rebuilt each of the three houses, during his lifetime and made everlasting alterations and extensions in order to accommodate his constantly growing collection of items for the education of his students. During his time as a Professor, his collection was open to his students on the days before and after his lectures at the Academy, in order for them to gain a better understanding of the issues he discussed. The collection consists of paintings and furniture, but there are many more items, that draw an analogy with the Renaissance

Figure 1.2: The Soane Museum, exterior and interior views (photos by author)

cabinet of curiosity, in the sense that it is a collection that aims to demonstrate the structure of the world. Architectural fragments of classic antiquity, original and plaster casts, replicas of important works of sculpture, busts of prominent personalities, fossils of extinct species, skeletons of animals, a wide range of subjects and interests was covered by the collection. Apart from the collection, the other object exhibited in the museum is the building itself. As Soane kept making alterations to the building and ceaselessly experimenting with the roofs of the rooms in order to create light effects that would provide the desirable display conditions for the objects as well as demonstrate architectural solutions to his students, the space itself in the museum is unconventional. There are unexpected sightings to rooms through glasses, mirrors and openings on the walls and on the floors. Mirrors and windows are used to frame views to selected objects.

This study will therefore attempt to investigate how multiple views affect the interface between the visitor and the narrative of private collection museums. Do the spatial configuration and the visual arrangement have an effect on the interface between the exhibition and the visitor? If so, in what ways?

According to Hillier and Hanson (1984), each building forms an interface between different types of inhabitants and between inhabitants and visitors. What distinguishes the one from the other is levels of control and rights of access. Inhabitants have durable rights as individuals in the building, while visitors have temporary and non – individual rights, i.e. the rights refer to the category of the visitor and not to the individual. In the case of a museum, the staff may be considered to be the inhabitants, as they have certain levels of control. Therefore, a first interface that the building creates is one between the staff and the visitors. There is another element in the museum, however, which may be considered inhabitant as well; the exhibition itself. Usually there is a curator or a group of curators behind each

exhibition. In the Wallace Collection and the Soane Museum, the first curators of the exhibitions were also the physical inhabitants of the buildings, Sir Richard Wallace and Sir John Soane, respectively. However, the work of the following curators cannot be overlooked. For this reason, this paper suggests that the inhabitant of a museum is the narrative; knowledge transmitted by the exhibition itself, the way the objects on display come together to form a comprehensible concept. In this context, three different interfaces may be identified within a museum; between the narrative and the staff; between the staff and the visitors and between the narrative and the visitors. This paper will focus on the last, although references will be made to the interface between staff and visitors. For the economy of time and space, this study does not distinguish between different types of visitors; for example there are locals and tourists, academics doing research, visitors to the museum café or shop, etc. What is interesting in these two museums is that they used to hold a dual function of residence and museum. The private rooms (bedrooms, kitchens) were inaccessible to the public, in the same way that they would be inaccessible to a visitor of the house.

The term multiple views refers to the situation where many spaces and objects in different rooms and levels are simultaneously perceived, ie. visual connections of different spaces. In the Soane museum this is done with the use of openings to courtyards, or voids, through which one can see the rooms across at the same level and at different levels, through openings between adjacent spaces (either permeable or not), and with the use of mirrors, plain and convex, which allow for one to see reflections, distorted or not, of spaces that otherwise would not be able to perceivable. Often the glimpse is distorted and momentary, fleeting, leading to incomprehensible or false perceptions of the space. In the Wallace Collection, space is not as vibrant visually. The views offered are more conventional as there are

long axial views through the rooms, monumental with perspective .The spaces are larger, although they still have hidden surprises for the visitor. These are hidden by the lack of light, and are revealed to the prudent visitor who wants to find out the details. They form a second level of reading of the objects on display.

The narratives of the two museums are formed by the collections of objects and by the way the building participates in their configuration. In the Wallace Collection, the narrative tends to remain separated from the visitor In the Soane Museum, the visitor becomes part of the narrative, as he has to become engaged in it in order to understand it. The narrative in the Wallace Collection follows the example of the princely collection, which will be discussed in the literature review chapter; it conveys to the visitor the nobility, elegance and education of the collector. In the Soane Museum there are different co-existing readings generated by views. The narratives that may be identified are: *educational*, for Soane's students, comprising of the classic items, the gallery, the dome and the picture room (although the students had access to the whole museum). The plaster casts are displayed side by side with important works of art, because their educational value is equal. The *intellectual* narrative, with the display of knowledge in the library, the novel around the imaginary monk, his tomb, his parlour and his cell, and various objects placed in a way that states a comment, for example the images of Napoleon in the breakfast room, as a General and then as an Emperor. Finally, the narrative around *comfort and luxury,* with the display of wealth and good taste of the collector, with the portraits, the expensive furniture and miniatures, the carpets and the elaborate drawings on the ceilings.

The analysis presented in this paper investigates the museum narratives, which in the case of the Soane Museum are not necessarily linear. The paper proposes that in the Wallace Collection it is the spatial configuration that determines the nature of the narrative - visitor

interface, to a formal museum space with objects to be looked at as unique pieces of art. In the Soane Museum, on the other hand, it is visibility that plays the major role in a space that asks the visitor to be actively engaged in the unfolding or interweaved narratives.

The chapter that follows gives an overview of the history of the museum as a building type, and of the theories that set the background for this study, as well as a brief introduction to the narrative theory and the structure of narratives. Chapter 3 provides a short introduction to the space syntax methodology, and the methods that were applied in this study. Chapter 4 gives a spatial and functional description of the two buildings. The analysis is presented in chapter 5, with the implementation of space syntax tools in order to approach the research question. The final chapter, Discussion, concludes the findings of the study, the restrictions and fields for further research.

2. LITERATURE REVIEW

This chapter presents an overview of theories that set the background for the current study. The relevant literature could fall into three general categories; the first one concerns the theories about the evolution of the different types of galleries over time, that lead to the contemporary art museum; the second is a brief introduction to the theory of narratives; finally, the third part gives an account of how the museum, or the exhibition space has been examined with the use of space syntax theory. Space syntax theory plays an important role in this study, not just by forming an integral part of the literature review, but also by providing the theoretical framework which supports and organizes the structure of the study.

Emergence of the public art museum

The public museum was formed during the late eighteenth and the early nineteenth centuries. As stated by Bennett (1995: 19), it was the result of the transformation of earlier types of collections as well as the adaptation of elements from other institutions that evolved at the same time, the department store and the international exhibition. The Renaissance cabinet of curiosity comprised of a collection, arranged in cupboards, organized around a central point of inspection, reserved for the prince, the owner of the collection. This cabinet represented an assembly of all reality in miniature, through which, the prince would be able to "symbolically reclaim dominion over the entire natural and artificial world" (Omni, cited in Bennett, 1995: 35). In such a collection, the doors of the cupboards remained closed, and were decorated with symbolic images of the objects they contained. This meant that what was actually visible, the paintings, mediated between the prince's

exclusive access to the collected items, which in turn mediated the order of the world.

The princely collection, from the Renaissance until the eighteenth century, was housed in luxurious galleries, which served as reception rooms. They were meant "to impress both foreign visitors and local dignitaries with the ruler's magnificence" (Duncan & Wallach, 1980: 453). Visiting the galleries always meant visiting the prince, even if the prince was not physically there. The iconographic programmes would draw flattering analogies to the ruler (Duncan, 1995: 22), in order to give an emphasis to the noble power, which the visitor was subordinate to. The exhibition was organized by a "prince – validating" narrative.

Duncan & Wallach (1980) give an account of the example of the Louvre, which was one of the most political and influential transformations of a royal collection to a "universal survey museum" or a public art museum. The collection was nationalized in 1793 by the revolutionary government, which saw in the collection the opportunity to illustrate and promote the new republican state. With this transformation, the state, as an abstract host, replaces the king, and the visitor is no longer the subordinate of the lord. He is a citizen, a part of the state itself, and an heir to an "ideal, civilized past" (Duncan & Wallach, 1980: 452).

In the Louvre, the architecture leads the visitor to join a ritual of procession through the halls, with the use of monumental axes and elaborate halls and corridors. The iconographic programme, regardless of the choice of route, leads the visitor to experience a sequence of the public heritage, from classic antiquity and the Renaissance to French art. The Victory of Samothrace is the heart of the iconographic programme; it draws constant relations and parallels to the great moments of the past, making the point that France is the true heir of classical civilization (Duncan & Wallach, 1980: 459). The public art

museum was therefore often organized in terms of a "history of the state" narrative.

Naturally, this could not be achieved simply by opening up a royal, ceremonial space to the general public. The collection had to be presented in a new way. The exhibits in art collections were rearranged according to the Enlightenment ideas; they were divided into art historical periods and national schools. In this new context, a work of art demonstrated only a moment of art history and lost its original meaning.

In England, the absence of an equally important royal collection led to a somewhat different development of the public art museum. The English ruling class, mostly comprised of landowners, had denied the use of a royal art collection as a national symbol, just as they had obstructed the growth of a very strong monarchy. The aristocracy and the conflicting emergent merchant class both sought social distinction in art collections, which were evident of wealth and power but, more importantly, of education, culture and morality. This cultural property had to be shared with the community, and the galleries functioned as reception rooms, public spaces, for the "admissible" public; the "well - born, educated men of taste, and, more marginally (if at all), well – born women" (Duncan, 1995; 36).

> "Art collections were prominent artifacts in a ritual that marked the boundary between polite and vulgar society, which is to say, the boundary of the legitimated power"
>
> (ibid;38)

The British National Gallery started out with the donation of the private collection of a self – made non English born businessman. This was representative of the growing acceptance in Britain of the new concept of the nation, consistent with the broader nationalism tendency in Western Europe of the 1820s and the 1830s. The new concept for the nation was, essentially, a middle class campaign to challenge the

political and administrative power that the aristocracy held only for themselves. The National Gallery opened in 1824, but the struggle between this new nation and its ruling class prevailed in the management decisions that had to be made for the organization of the iconographic programme and the erection of the new building in Trafalgar Square. It was only in the third quarter of the nineteenth century, when political and social developments made the advantages of a "prestigious monument that could symbolize a nation united under presumably universal values" (ibid; 47), that the National Gallery became a complete civic ritual.

According to Duncan (1995: 8), the contemporary society is full of situations and events that are defined by rituals, which do not have to do with religion, but with the common beliefs about the order of the world and the individual's place in it. Museums are eloquent physical illustrations of such rituals. One property of a ritual site is that it is programmed for the enactment of something, for a performance. A museum may give the visitor a structured experience, an art historical narrative, through the architecture and the arrangement of the objects. However, a ritual is an experience with a purpose, an end. The eighteenth century philosophy on works of art wanted the museum visitors to experience enlightenment and spirituality in the museum. This idea was a direct influence from the philosophic formulations on *liminaliity*, a passage out of the daily world into a sphere where the business of normal life is suspended, an experience of "moral and rational disengagement, that leads to or produces some kind of revelation or transformation" (ibid; 14). Museums were thus regarded as spaces that would provide such a liminal experience to the visitors and enable them to achieve new perspectives about life, the world and themselves. This idea evolved in the nineteenth century to a notion of

a museum as an institution that should aim to enlighten and improve the visitor's moral, social and political views.[1]

In the late eighteenth and the early nineteenth centuries, the museum, along with other institutions such as the library and the public lecture room were brought under the provision of the government, as they were regarded as useful for promoting the new liberal forms of power and for reforming the social behaviour of the working class. "The museum would help the working man choose a life characterized by moral restraint as preferable to the temptations of both bed and ale – house" (Bennet, 1995; 20). The museum became one of the few public spaces that were considered descent for women to visit.[2] These spaces provided a venue for cross – class and cross – gender intermingling. This was regarded as a mechanism for improving the influence of the middle and upper class on the working class masses.

Narratives

The theory of narratives is a wide field, with applications in many disciplines, from literature, to film theory, paintings, and even architecture. What is attempted here is a brief introduction, in order to define the term narrative in the context of this study.

Barthes (1977) uses the concept of levels of description to classify the elements which make up a narrative. At least two are necessary; the story (argument) comprising a logic of actions and a syntax of characters and the discourse, comprising the tenses, aspects and modes of the narrative. For him, a narrative is a hierarchy of instances, as in order to understand a narrative one must not simply

[1] The twentieth century saw the rise of a rival model of a museum, one in which works of art were to be displayed merely for their aesthetic value, i.e. aesthetic contemplation and not as illustrations of history or archaeology (Duncan, 1995; 19)

[2] According to Bennet (1995; 29) it was the department store that was the first "custom – built, single sex, urban public space" for women, i.e. where it was socially acceptable for women to go without a chaperone.

follow the unfolding of the story but also to recognize the build up of layers, to relate vertically the horizontal interconnections. The basic units of narrative identified by Barthes are: the nuclei, complementary and consequential units which serve a functionality of doing, the cardinals, consecutive and consequential units that represent risky moments of a narrative between alternatives, the catalysers, consecutive units which provide areas of rest in the narrative, but still useful as they maintain contact between the narrator and the addressee, indices, which serve a functionality of being, usually psychological indices or notations of atmosphere, and, finally, informants, which provide pure data without immediate signification, but are the ones that embed fiction into the real world.

These units are then put together according to a narrative syntax. Informants and indices combine together freely, catalysers and nuclei are linked by relations of implication, cardinal functions are bound together. The structure behind the links of the units may be temporal, logical, linguistic, or at the level of the actions of the characters. In any of the cases, the functional covering of a narrative requires a structure of relays, formed around a basic group of functions, a sequence. A sequence opens when one of its components has no antecedent, and closes when another component has no consequent. Components of different sequences may be imbricated in one another, and therefore different sequences may be overlapping, complicating the linear succession of terms. The complexity of a narrative allows it to integrate backwards and forward movements. It is this integration that makes possible the understanding of discontinuous elements. Narrative appears as a succession of tightly interconnected mediate and immediate elements, with a first horizontal reading, and a second, vertical one, with the aid of the integration.

According to Herman, Jahn & Ryan, (2005), narrative is not in essence a language – based artefact, but a mental construct, created

as a response to various types of signs. The definition of the medium that carries the narrative is an open debate, but in any case, it can be understood either as a transmissive concept (technology or cultural channels) or a semiotic one (language, sound, image). The medium constrains the type of narrative. For Ryan, media should be regarded as a set of virtualities to be actualized or not. A narrative may interact with its medium; exploit its properties fully or ignore them and use it as a transmission channel.

Ryan (1991) also makes the distinction between "tellable" and "untellable" stories. A tellable story has a structure which is strong enough to support constituents of uncertainty and surprise on the part of the addressee. This is based on the addressee's inclination to infer virtual possible steps of the narrative based on the information he receives. If a narrative is strictly linear, with no potential for such projections, the story is "untellable".

It can be inferred from the above that in the case of a museum exhibition, a narrative is the story that the arrangement of the objects, in relation to the spatial structure of the museum itself form the narrative. The units of the narrative, after Barthes, can be critical or not to the plot, centres of attention or background, and form overlapping sequences. An exhibition becomes "tellable" when the visitor's imagination is stimulated to make inferences about what he is going to encounter next, and when the element of surprise is present. The narrative is the "inhabitant" described by Hillier & Hanson (1984), conveying its story to the visitor. Or, the way Peponis et al (2003b, p.29.3) have put it eloquently, narrative "refers to the manner in which the contents of individual exhibits can be conceptually related".

Space syntax research

Space syntax has examined a number of museums and exhibition spaces. These projects put into perspective and enriched the current study in the comprehension of museum spaces. One of the first papers published on museum spaces was by Peponis & Hedin (1982) on the Bird Gallery and the Human Biology Hall of the Natural History Museum in London. The former had maintained its original layout since 1881, while the latter had been recently rearranged according to the contemporaneous exhibition views. In the Bird Gallery, the sequence of spaces arranged on either sides of a central corridor was consistent with the eighteenth century ideas of hierarchy and classification of nature. The renovation of the Human Biology Hall, on the other hand, with a sequence of spaces with varying depths, reflected the theory of evolution that had prevailed after the second half or the nineteenth century. The changes in the exhibition layout were also representative of a changing relationship between the visitor and the knowledge to be conveyed, from explicit to indirect and elaborated. In the renovated Human Biology Hall a pedagogical intention was evident in the layout of the subdivided and axially fragmented layout, which would individualize the experience. The point the paper made clearly was that "space layout can become part of the reproduction of forms of enunciation and transmission of knowledge, and become active in the structuring of social relationships." (Peponis & Hedin, 1982; 25).

A discussion of exhibition space in behavioural and cognitive terms takes place in a paper by Peponis et al (2003b) on open plan exhibition spaces. The authors look at two traveling science exhibitions with mostly individual, interactive exhibits which were categorized according to conceptual themes, marked with the use of various means, such as colouring, spatial zoning and labeling. The research was aimed at the ways in which permissive, open layouts influence patterns of exploration. The research showed that awareness of the

exhibits was dependent on direct accessibility and on whether the exhibits were thematically grouped or not, while the pattern of physical interaction with the exhibits depended on cross visibility between individual exhibits and on conscious decisions made by cognitively registering the thematic labels. The findings of the paper indicate that the design of exhibition space layout can enhance the relations between visibly and accessibly equal objects, and affect the ways in which they are perceived by the visitor.

Another study by Peponis and Sravroulaki (2003) on the Castelvecchio art museum in Verona examines museum space as a symbolic form. The authors argue that Carlo Scarpa's design of the exhibition performs as a "pedagogic device aimed at art as a particular mode of understanding problems, including problems of visual perception and spatial arrangement". Firstly, the analysis of the positioning of the statues in the statue gallery revealed a design intention to have the gazes (the direction to which each statue is looking at) of the statues in relation to each other, and at times to have them intersecting at a specific point, which usually coincided with the integration core. This was a structure to be revealed to the visitor by movement in the space. A study by Tzortzi (2004), which compares the Castelvecchio gallery to the Sainsbury Wing of the British National Gallery, concluded that the objects on display in the Castelvecchio are used in order to articulate space, turning the visit to the museum a spatial event, an architectural experience, rather than using the space layout in order to enhance the exhibits.

The same study is consistent with an earlier report published by the same author on the Sainsbury Wing (Tzortzi, 2003). The analysis of this wing concentrated on the micro – scale of spatial arrangement in the exhibition, and the relations between architectural and curatorial intentions. The visitors' movement pattern was explained by the layout configuration. It is a case where the local structure has a more

significant effect in the patterns of movement than the global structure. The spatial arrangement of the paintings however, is served by the powerful axiality of the spaces and the synchronic visibility. Paintings with visual strength are also found on the most powerful axially spaces. This use of axiality makes possible the elimination of distancing effects (Tzortzi, 2003; 67.13). This allows for a flexible positioning of the paintings, in a way that a visitor can find paintings of the same artist in different rooms, thus in different contexts, according to the thematic categorization and the various schools of the works of art. The author argues that the repetitive perspective views through spaces "deprive the visitor of any sense of discovery, while at the same time, providing a rush of information changing quickly as he moves around" (Tzortzi, 2003; 67.14). the study concludes that although the configuration of the space overruns the curatorial intentions, the way the curatorial strategy and the design of the space function together leads to a successful gallery space. This idea is discussed further by the same author in a comparative study between the Kröner – Müller Museum in Holland and Louisiana in Denmark.

A study presented by Psarra et al (2007) on the Museum of Modern Art (MoMA) , in New York, looks into the relationship between spatial configuration, narrative strategy and visitor experience, in an exhibition set up that has moved away from the linear classification towards a multi layered model of narrative. The study focuses on the new galleries, on the fourth and fifth floors, constructed in 1997. In both galleries the rooms are interconnected allowing for many possible routes by the visitors. There are two points of entrance in each floor and the staircase connecting them lies in the middle. The arrangement of the exhibits follows a chronological order in macro scale, but in micro scale allows for simultaneous view of works of different periods, and therefore comparisons. The findings of the study indicate a different conception for each floor. On the fifth, there are more visual

connections among paintings and art movements. The multiple narratives of the exhibition are based on three strategies: a main sequence that intersects secondary ones, opposite art strands are displayed in different rooms, but form part of one space, and open views from a distance integrate these strands. Visitors are required to be more exploratory. On the fourth floor, the conditions of viewing are more private, corresponding to more private conditions of the development of art of the period presented there, and visitors follow a more linear path.

Peponis et all (2003a) present a study on spatial meaning by looking at the door as a form of passage that constructs spatial experience and at the same time controlling boundaries between spaces. A theoretical set of doors with changing variables are examined in term of visibility (transparency or reflection through mirrors)[3]. In the examples presented, visibility and permeability do not coincide, passage becomes associated with the reflected image of oneself, mirrors momentarily bring together into perception the mutually exclusive relations that normally define the crossing of a boundary, and, finally, the co-presence of different subjects does not unify them, but differentiate them.

A following study by Stavroulaki and Peponis (2005) focuses again on issues of visibility, this time with Byzantine icons in churches and in museums as a point of departure. Here, there is an attempt to develop tools of syntactic analysis of visibility, taking into account at the same time the levels of illumination of the space. The authors suggest that in a Byzantine church, icons are arranged according to light and movement. The authors propose the taking into account of

[3] The design of the doors had a departing point in the myth of Orpheus and Eurydice, where Orpheus crossed the threshold of the underworld to claim back his deceased wife, Eurydice. The paper discusses briefly the question of assigning referent meaning to design, which, according to the authors diverts attention from the design product to the object of reference.

layered rather than simple descriptions for analyzing the relationships between spatial configurations and points of view. The layers of description used in their study are the visibility graph analysis, analysis of illumination levels and a field of intersecting gazes, from the dominant persons depicted in the paintings and icons. The analysis reveals that the pattern of the gazes draws the visitor into the central part of the church, under the dome, where the light is more diffused. The isovists of specific icons were overlaid with the effects of light, in order to determine zones of distinct, indistinct and elusive visibility, indicating that a peripheral zone of elusive visibility mediated between zones of distinct and indistinct visibility, which meant that, perceptually, an icon was never approached directly. These zones contained other icons the relationships of which to the original one were also defined as elusive, indistinct and distinct. This revealed that certain icons in the narthex were strategically located in order to prepare the visitor for entering the main church. The church configuration is then compared with a Byzantine museum, which attempts to reconstruct the structure of the church, at a first level. However, the configuration of the gazes, the larger empty spaces between the icons, intended for better viewing, and the fact that in the museum icons are placed in a way that promotes individual viewing and comparisons, create a different spatial experience for the visitor, than the church.

The issue of light and spatial structure is also discussed by Antonakaki (2007), in a study on religious architecture, Byzantine and Ottoman. The paper finds that the levels of light in a church and in a mosque were consistent with the respective religious beliefs, in both cases making a reference to the divine, but in different ways. In the Byzantine church, the light coming from the central dome is more diffused and mystical, playing an integral and mystical role in the worship rituals, while in the mosque the open plan arrangement serves

the collective sense of the Muslim praying, and the interior is lit uniformly.

A recent study by Penn et al (2007) on the organizational culture of the British Museum in London, examines the ways in which different departmental groups relate to spatial behaviour. The study suggests the introduction of a spatial layer of analysis alongside the one of the individual agent. In the paper, the role of the spatial layout and object arrangement is described as twofold; on the one hand they form the available route choices for the visitor, whose choice defines the sequence with which to view the objects and on the other they constitute the general context of seeing each object, the objects in the immediate vicinity, along longer visual axes or on other levels of the building. This context changes constantly according to the viewing point of the visitor. The authors use Ryan's concept of "tellable" stories to explain this situation where the visitor encounters new information (images, spaces) and is actively engaged in making route choices.

3. RESEARCH METHODS

This chapter describes the methods used for conducting the research of the current study. It introduces the space syntax theoretical approach and research tools as well as observation techniques that embody space use.

Space syntax approach

The theoretical framework known as Space Syntax has been developed mainly by Professor Bill Hillier in the Bartlett, UCL, since 1975. It aims to develop an analytic way of describing and studying space and spatial configurations, from cities to buildings. It involves four stages of thinking about space; the stage of representation, where spatial elements are identified; the analysis stage, in which the configurational relations of the spatial elements are analyzed; the genotype stage, i.e. the identification of common, repeated patterns; and the theory stage, in which a cross cultural comparison of spatial configuration and its relations to culture and to social behaviour are developed. These analytic techniques are enhanced with techniques of observing the use of space by people, and statistical techniques for overlaying various types of data.

For the purposes of this paper, certain syntactic tools were used in order to approach the research question and examine the nature of the interface between narrative and visitor in the two museums.

A central idea in space syntax analysis is that of the graph, which provides a way of representing relations between elements. The element is represented as a node, and a relation with another node is represented with a line. The justified graph is used for acquiring an image of t spatial structure. A node is set as the root of the graph and then the rest of the nodes are lined up, one level of connections at a

time. The shape of the graph changes for different roots. This is a graphic way of showing how well integrated spaces lead to shallower graphs, and reveal the structure of the space, with the formation of rings or not, and with the identification of spaces – destinations or spaces for through – movement. It is also a good illustration of how space is different when seen from different points of view. The j – graph is used to reveal the potential for choice of route in each museum.

The museums' spatial configurations are also analysed at the level of the plan, with two more kinds of spatial representation. The first is the convex map, which shows a set of the fewest and fattest convex spaces that cover the system[4]. The second one is the axial map. It comprises of the set of the fewest and longest axial lines that cover all the convex spaces. An axial line is a straight line of sight, possible to follow on foot.

These maps allow for the calculation of a variety of syntactic measures. The simplest one is connectivity, which measures the number of lines that intersect with each line in the system, and depth, which measures the number of syntactic steps (convex or directional – axial) from a selected origin to the rest of the system. Integration, one of the key properties of configurations examined by space syntax, measures the degree to which each element in the system is present in the simplest (fewest syntactic steps) route to and from all the other elements. This is global integration (Rn for an infinite number of syntactic steps) and it measures the importance of an element in relation to the whole system. Another version of integration is local integration, usually R3, which restricts the calculations to only those

[4] A convex space is geometrically defined as a shape in which any line between any two of its points does not cross the perimeter of the shape. For spaces this means that any two points within the space are intervisible (Hillier & Hanson, 1984; 97-98).

lines that are up to three steps away. This measures the localized importance of a space[5].

In order to examine further issues of visibility, another tool was used. The isovist, a 360° field of vision. It may have one point in space as origin, or other elements, such as a convex space, an axial line, a building façade, a window, an object, etc. The properties of critical isovists may also be used in the syntactic analysis. This paper takes the isovist analysis further with the addition of a second layer, that of the mirror isovist, i.e. the area visible through a mirror, and the object isovist (Stavroulaki & Peponis, 2005) i.e. the area from which a specific object is visible. The Visibility Graph Analysis (VGA), or isovist grid analysis, originates from the idea of an isovist. It is performed through establishing a grid of isovist location, generating the isovist for each location, recording a number of properties of the isovist and representing these values by colouring up each isovist location.

All these syntactic tools are related to a two dimensional analysis on plan in particular. The analysis of the Soane Museum attempts to touch upon the third dimension, with the presentation of non - conventional axial maps and VGA, as the visibility effects appear to have a strong effect on the spatial experience. Non –are presented

The visitor behaviour in the museums was observed with the "snail trail" observation technique, where the objects of the study are followed for a period of 15 minutes, with recording on plan of where they go, pause, stop, orientate themselves, engage into conversation with other people, etc. This technique results in a direct graphic representation of flows of people, and identifies the predominant routes taken in a system. It is specifically useful to observe the patterns of movement from a defined movement distributor, in this case the entrance to the museum. This technique has been used widely in the

[5] For a wider and more detailed description of syntactic measures, see, Hillier and Hanson, 1984, The Social Logic of Space, Chapter 3.

past to observe patterns of movement of visitors in museums and exhibition spaces (Psarra et al, 2007; Hillier and Tzortzi; 2006, Tzortzi, 2005; 2004, and 2003).

4. THE MUSEUMS

Two private collection museums are the object of the analysis, both located in central London; the Wallace Collection, and the Soane Museum. They both present the art collections of the owner of each building, and they are both relatively small in size, compared to museums in general. Figure 4.1 shows the location of the two museums in central London. The Wallace Collection is a detached building, sitting monumentally in front of Manchester Square, off Oxford Street. The Soane Museum, much smaller in size, is three united terraced houses, on the side of Lincoln's Inn Fields, off High Holborn.

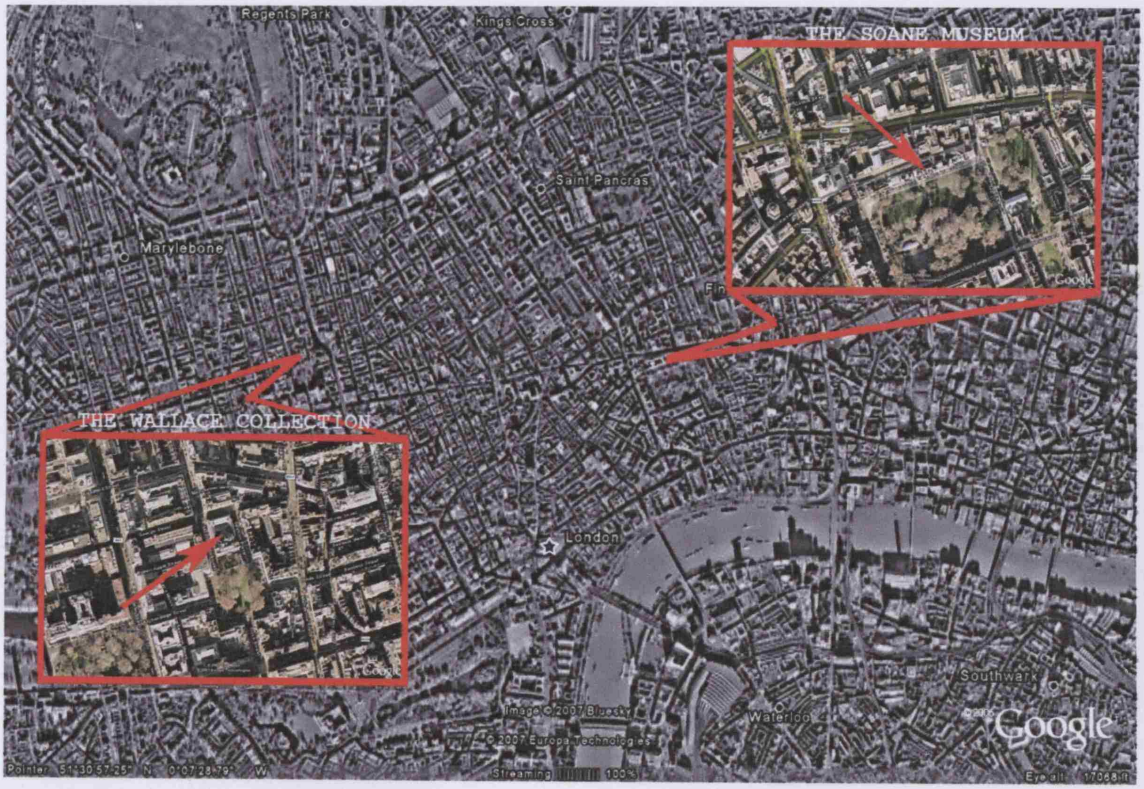


Figure 4.1: The location of the two museums in central London. (Image based on Google map).

The Wallace Collection

The Wallace Collection opened to the public as a museum in 1900. Hertford House, the building which houses the collection, was originally built in 1788, for the 4th Duke of Manchester, and leased by the 2nd Marquess of Hertford in 1797, who made some additions. During 1836 to 1850 the building was let to the French Embassy, and the 4th Marquess of Hertford rarely visited London, which left the House as a storing space for his art collection. In 1870, Sir Richard Wallace, the illegal son of the 4th Marquess of Hertford inherited the property, and his father's collection, much of which was kept in Paris. In 1872 he commissioned the architect Thomas Ambler to undertake a large programme of alterations in order to accommodate the collection. That was when the inner courtyard, the Smoking Room and the top lit galleries of the first floor were added. After the death of Sir Richard Wallace and of Lady Wallace, the collection opened as a public museum in 1900. In 2000, an extension and refurbishment was completed by Rick Mather, after an architectural competition. Now the courtyard became covered with a glass roof, and accommodated a café and a sculpture garden, and the basement spaces were used for new exhibition and conservation galleries, a library, a lecture theatre, and other facilities, organized around the *porphyry court*.

The building comprises of three levels. The ground floor (fig 4.2) houses galleries, organized around a central courtyard. From the entrance to the building on the south, in front of Manchester Square, one may reach directly the dining room, which gives access to the courtyard, the main staircase to the first floor (fig. 4.5), the front state room and the museum shop. From the front state room, one may continue to the back state room (the state rooms is where visitors were received by Sir Wallace) or to the 16th century gallery, and the smoking room. Continuing from the shop, one reaches the housekeeper's room

and then the oriental and European armoury galleries (fig. 4.7), which extend to the north side of the building, forming the fourth façade to the courtyard. The first floor (fig. 4.3) is accessed by the main staircase at the entrance and by two secondary ones, located on symmetrical point in the smoking room and the European armoury I gallery. There is an additional vertical movement core, with lift; access to this is controlled by staff and granted to visitors with mobility problems. The East galleries house the Dutch painting collection, and the West, the 19th century one. The south part of the building contains the drawing rooms, Sir Wallace's study and Lady Wallace's boudoir, while the north part forms the Great Gallery (fig. 4.8). The basement (fig.4.4) is accessed by the staircases of the courtyard, leading to the porphyry court (fig. 4.6), and by a smaller staircase at the north – west corner of the ground floor, which leads directly to the exhibition galleries. The porphyry court organizes the arrangement of the spaces in the basement. There is a visitor's library, the conservation gallery, the exhibition galleries, lavatories and other facilities.

Upon entrance, the visitors do not receive instructions on how to move in the exhibition. If asked, members of staff suggest starting from the first floor. The visitors are left to decide on their own the route they will take in the exhibition rooms, and the alternative choices are large in number.

Figure 4.2: The Wallace Collection, Ground floor plan (source The Wallace Collection Guidebook).

Figure 4.3: The Wallace Collection, First floor plan (source: The Wallace Collection Guidebook)

Figure 4.4: The Wallace Collection, Basement plan (source: The Wallace Collection Guidebook)

Figure 4.8: The Wallace Collection; the main staircase (photo by author).

Figure 4.6 The Wallace Collection; view of the staircase leading from the Dining Room and the Courtyard to the Porphyry Court in the basement (photo by author).

Figure 4.7: The Wallace Collection; view of the European Armoury II Room (photo by author).

Figure 4.8: The Wallace Collection; view of the Great Gallery on the first floor (photo by author).

The Soane Museum

The Soane Museum is located at numbers 12, 13 and 14 Lincoln's Inn Fields, three converted terraced houses. The building history of Soane's house – museum is complicated due to the owner's never ending alterations and rebuildings. In 1732, Sir John Soane bought and rebuilt No. 12, where he moved in with his family and started his practice the next year. After his appointment as a Professor in the Royal Academy of Arts, in 1806, he started moving his collection from his county house in Ealing, Pitzhanger Manor, to Lincoln's Inn Fields, in order to make it accessible to his students. This led to a series of alterations in order to accommodate the expanding collection; during 1808 – 1809 an annex was built to the rear of No. 13. In 1812, No. 13 was rebuilt and in 1824 the back section of No. 14 was erected (the house was rented out). Minor alterations were constantly taking place from 1811, when the house began to be full time occupied, until just before Soane's death, in 1837. (Millenson, 1979). The museum was already open in Soane's lifetime.

Today, the entrance to the Museum is from No. 13 (fig 4.9). The Library (fig. 4.15) and the Dining Room is where Soane used to entertain guests and keep his books. The Study and the Dressing Room, which were for Soane's personal use, lead to the Picture Room, where the painting collection is kept. The use of movable panels, hinged from the walls, allows for three times more paintings to be kept than would be normally possible. To the south the third set of planes open to reveal a statue of a Nymph, hung on a wall beyond and lit dramatically from above (fig. 4.14), and the Monk's Parlour, a room in the basement. The north part of the building is devoted to Soane's plaster collection, with an atrium that provides light for the basement. Soane's professional office was in a small mezzanine off the ground floor, supported by columns and lit generously from the ceiling. This space is not accessible to visitors of the museum today. The Breakfast

Room (fig. 4.12), which looks onto the courtyard, is a display of Soane's experimentations with light. A square dome over a rectangular room, allows for light to come in through the sides as well as from the centre of the dome. The use of convex mirrors makes the lighting effects even more elaborate in the room, and the regular mirrors which are placed here, multiply the space and make the room seem larger than it really is. The current shop on the north – east corner of the building was a 1890 addition, in order to display three paintings in better lighting conditions. This is also when the ante – room, which connects Nos. 13 and 12, was added. No. 12, Soane's original townhouse, contains the Breakfast Parlour, with a starfish formed ceiling vault. The adjoining dining room was converted into the Soane Gallery in 1995 by Eva Jiricna, to display changing exhibitions. The basement (fig. 4.10) is accessed either by the main staircase by the entrance, or by a smaller one on the north side of the building, which leads to Monk's Parlor, a room created by Soane to demonstrate the Gothic style. They were the rooms of an imaginary monk, whose tomb was in the yard outside. In reality, this is the tomb of Mrs. Soane's lap dog. The design of the room, the restricted space and the dark colours, and the association with death were meant to create a melancholic atmosphere, that would teach the student of architecture how to use light and space in these terms. The rest of the basement, the Crypt, was intented to resemble Roman catacombs. The sarcophagus of King Seti I, the central item on display (fig. 4.13), is one of the most important Egyptian antiquities ever to be discovered, originally brought to England for the British Museum, which then refused to pay the price of £2,000. Soane bought it in 1824, and had to bring down part of the north wall of the basement in order to be able to place the item in the room. The first floor of No. 13 (fig. 4.11) comprises of two Drawing Rooms, used by Mrs. Soane as the principal entertaining rooms of the house.

Here, upon entrance, the visitors are advised to start exploring the exhibition from the Dining Room. Once there, a sign indicates continuing into the Study and the Dressing Room. As observation reveal in the next chapter, most visitors follow these recommendations. Therefore the choice offered by the configuration of the plan starts to have an effect on the visitor movement patterns deeper in the system.

Figure 4.9: Soane Museum; Ground floor plan.

Figure 4.10: Soane Museum; Basement plan.

Figure 4.11: Soane Museum; First floor plan.

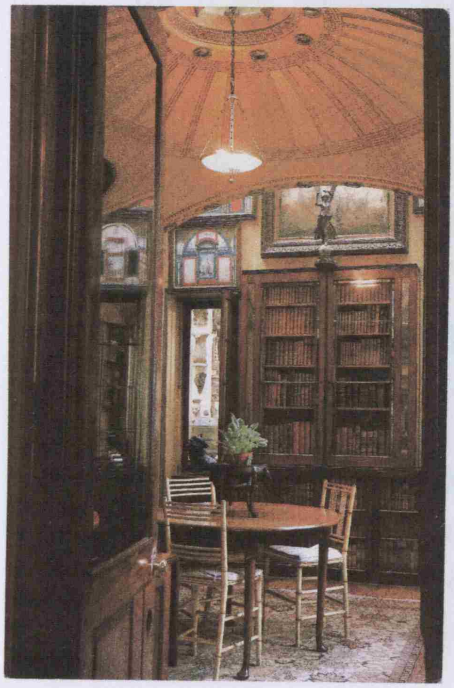


Figure 4.12: Soane Museum; view of the Breakfast Room (source: Architectural Monographs, John Soane, 1983, p.35)

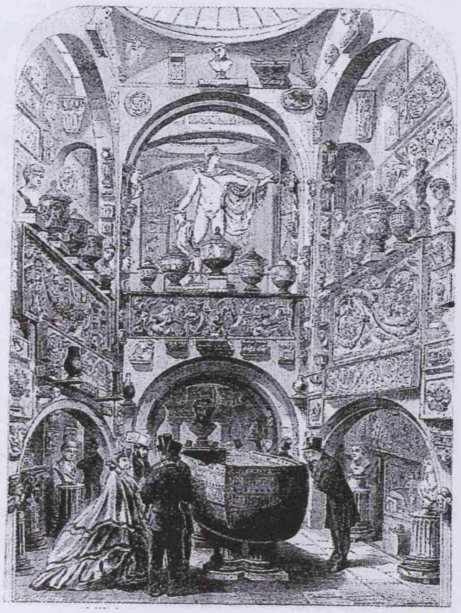


Figure 4.13: Soane Museum; In 1864 the 'Illustrated London News' included a feature showing various rooms from Sir John Soane's Museum, by then in existence for some thirty years and opened sporadically in daylight hours. Here visitors explore the basement (source: Darley, 1999, p. 322).

Figure 4.14: Soane Museum; view of the Picture Room, with the panels open and view to the statue of a Nymph (photo by author).

Figure 4.15: Soane Museum; the Library, seen from the Dining Room (source: postcard, © The Trustees of Sir John Soane's Museum).

The Soane Museum was created with the intention to educate students and visitors in general, and teach them the forms of the past, in order for them to be adapted in modern architecture. In this sense, in terms of intentions, it is closer to the universal survey museum, as it presents to the visitor a cultural heritage, which belongs to all. The Wallace Collection on the other hand, is closer to the princely collection type of exhibition; it was meant to acknowledge the social, financial and cultural status of the 4th Marquess of Herftord, who was the main collector, and later of Sir Richard Wallace himself. This difference of intentions and objectives is reflected in the space, as the Wallace Collection is a conventional grand house, while the Soane Museum is defined by spatial manipulations with the use of light and mirrors.

5. ANALYSIS

This chapter aims to investigate the nature of the interface between visitor and narrative in museum spaces with emphasis on issues of visibility, by analyzing spatial layouts as configurations of related spaces. This is done with a variety of syntactic tools described in the previous chapter, namely the convex, the axial and the visibility analysis. These are then compared against the data collected on visitor behaviour through observations conducted in each museum.

The axial analysis shows the importance of the third dimension in the Soane Museum. The visibility analysis is enhanced with the generation of different isovists from mirrors and objects, especially in the Soane Museum, in order to investigate the visibility effects of mirrors and light in the spatial experience. The analysis brings to surface the different approaches of the two museums in the spatial relations to narratives.

5.1 Convex analysis

For each museum, the plan was divided into convex spaces, forming the convex break up. The relations of the convex spaces were then calculated with the use of Pajek[6] (mean depth values), which led to the calculation of integration values (Hillier & Hanson 1984) for each convex space. The values were then divided into colour bands of equal ranges (where red stands for highest values and dark blue for lowest) and each space was coloured according to its integration value. The results are displayed in the following figures. These convex integration maps are a graphic way to display the emergent integration patterns for each museum.

[6] *Pajek* (meaning spider) is a free academic software programme for network analysis, created by Vladimir Batagel and Andrej Mrvar from the University of Ljubljana, available for download at http://vlado.fmf.uni-lj.si/pub/networks/pajek.

The convex integration maps reveal that in the Wallace Collection (fig.5.1.1), the integration core is found upon entrance, and goes through the courtyard of the ground floor. It also draws more importance on the west wing (bottom right corner in the plan), where the 16th century collection is found. The first floor is relatively segregated, and so are the new exhibition galleries of the basement.

In the Soane Museum (fig. 5.1.2), the highly integrated spaces (the breakfast room and the dining room) lie in the middle of the plan of the ground floor, and the main staircase by the entrance. Again here, the new exhibition gallery is one of the most segregated spaces, followed by monk's parlour in the basement, a space intended by Soane for solitary moments, and, contrary to the practice of most museums, the list closes with the museum shop.

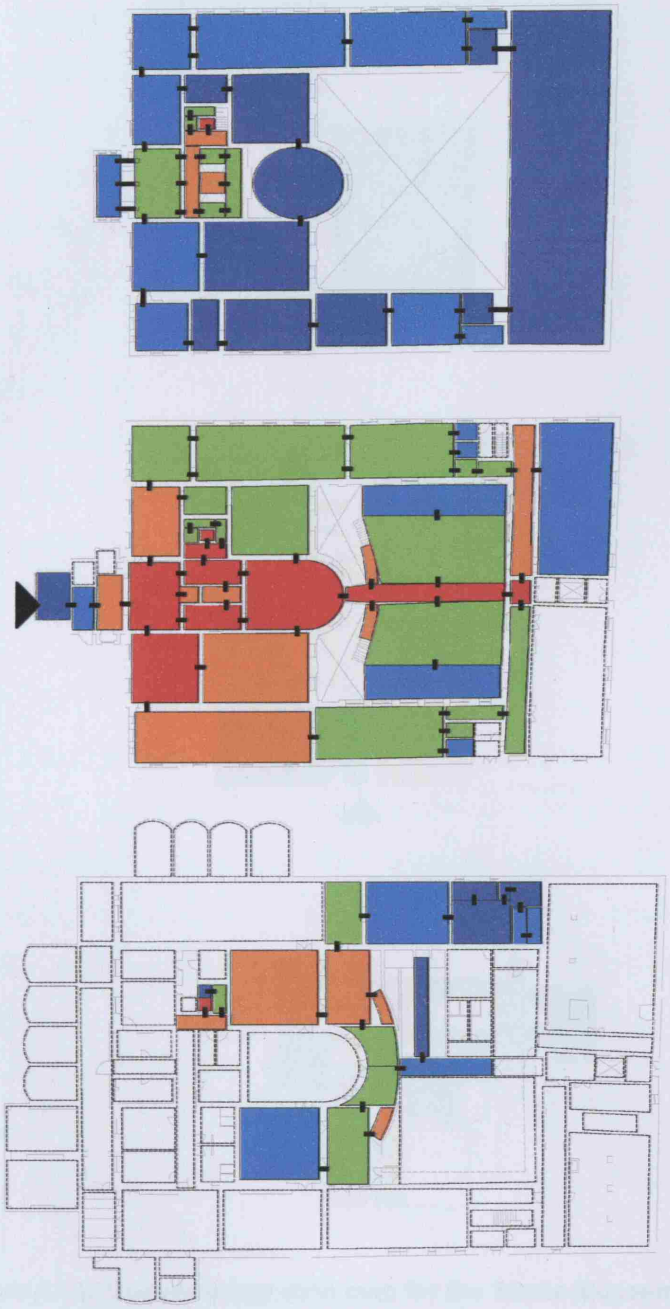


Figure 5.1.1: Convex integration map of the Wallace Collection. From top to bottom: first floor, ground floor and basement.

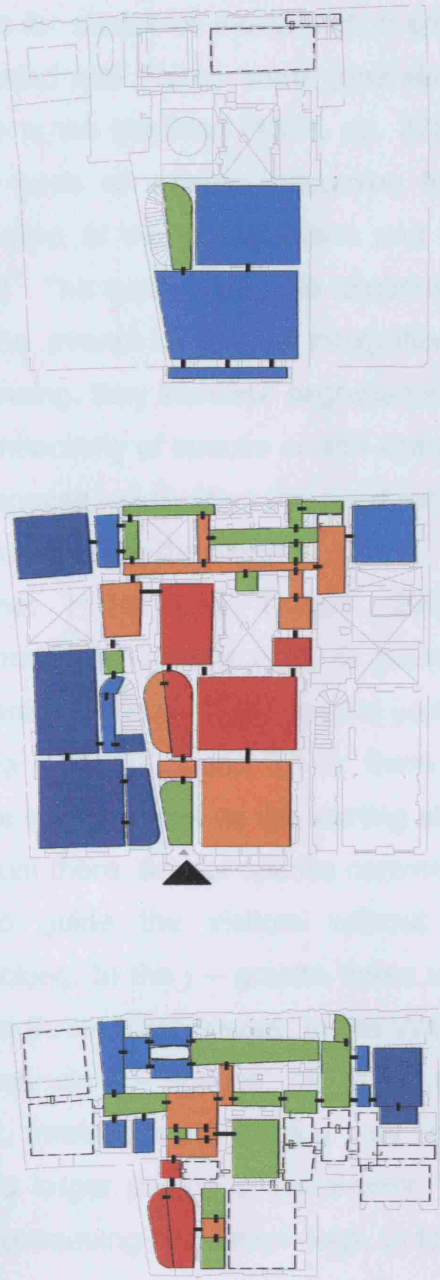


Figure 5.1.2: Convex integration map for the Soane Museum. From top to bottom: first floor, ground floor and basement.

In order to examine the structure of the space and the configurational potential for choice of movement, a series of justified graphs (j – graphs, created with Pajek), were generated as described in Chapter 3. In Space is the Machine (1996, pp. 275 - 334), Hillier identifies four generic types of spaces, according to how each is placed in the local context of the configuration and its subsequent potentials for movement[7]. The number and the relations between each type of space affect the overall degree of integration. As b and d spaces increase sequencing, they increase segregation, while a and c spaces increase the connectivity of spaces or add spaces immediately adjacent to circulation spaces, eliminating the need for further through movement, and therefore increase the integration.

The pattern that Hillier and Tzortzi (2006) define as characteristic of the museum / gallery type, is present in the two museums discussed here, as shown in the graphs justified from each entrance to the building (figs. 5.1.3 and 5.1.4): there is a gathering space near the entrance which serves as the starting and ending point of the visitors' route. From there, sets of spaces commence, which are strongly sequenced to guide the visitors without the need for orientation and backtracking. In the j – graphs these appear as deep rings, usually connected through staircases. In the Wallace Collection (fig. 5.1.4), there are only six b – spaces, 7% of the total number of spaces in the museum, (marked blue) leaving very little potential for sequenced spaces, and larger choice of movement. This is evident with a big number of interweaving circulation rings. In total there are 43

[7] An a – type space has one connection, which means it is a dead end. As it has no through movement potential it is likely to be a space for occupation. A b – type space has more than one connection, but is on the way to or more dead ends, which means that all through movement must go back the same way. In a configuration with no movement choice, all the spaces are a and b types. A c – type space has two connections and lies on a circulation ring, which allows for one alternative way back for through movement. A d – type space has more than two connections and is part of at least two rings, providing more than one alternative ways back. According to Hillier (ibid), a d – space tends to be a local focus of movement.

c – spaces (almost 50%), in which one must either return the way they entered or move to the next room of the sequence, and 25 d – spaces, (28 %) which provide one with choices for further exploration of the building and the exhibition.

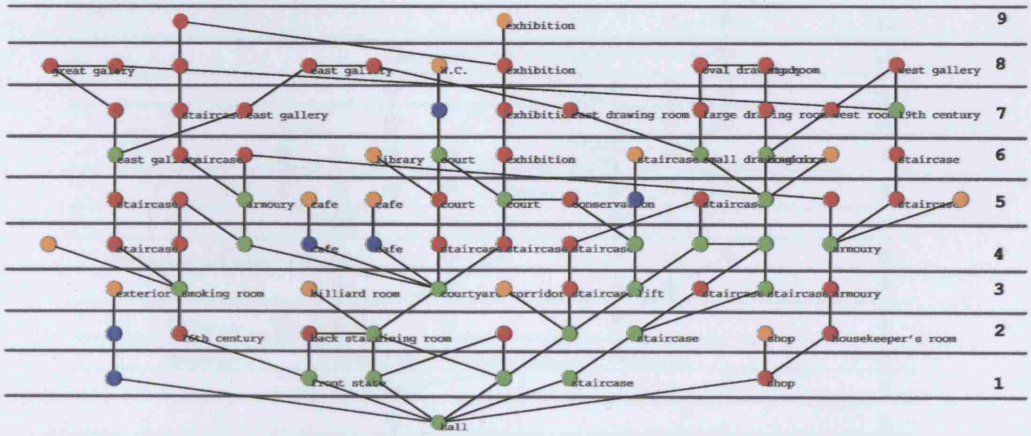


Figure 5.1.3: The Wallace Collection, graph justified from the entrance; a - spaces are marked orange, b blue, c red and d green

In the Soane Museum, (fig. 5.1.4) the b – spaces are significantly more, a fifth of the total number of spaces, constituting sequences of spaces and leading visitors through defined routes. There are less c – spaces than in the Wallace Collection, (21, i.e. 33%) and even fewer d – spaces (11, i.e. 17 %), which means less choice of route potential. This also leads to a deeper system; it takes 15 steps to reach all the spaces in the system, while in the Wallace Collection it only takes it only takes 9, although it is a larger system (it consists of 87 convex spaces, while the Soane Museum consists of 63). However, the visitors tend to backtrack more often than in the Wallace Collection, and stop more frequently to orientate themselves. This may be due to the fact that there are significantly more visual connections between spaces, as following analysis will demonstrate, and mirror effects which give a misleading impression of permeability.

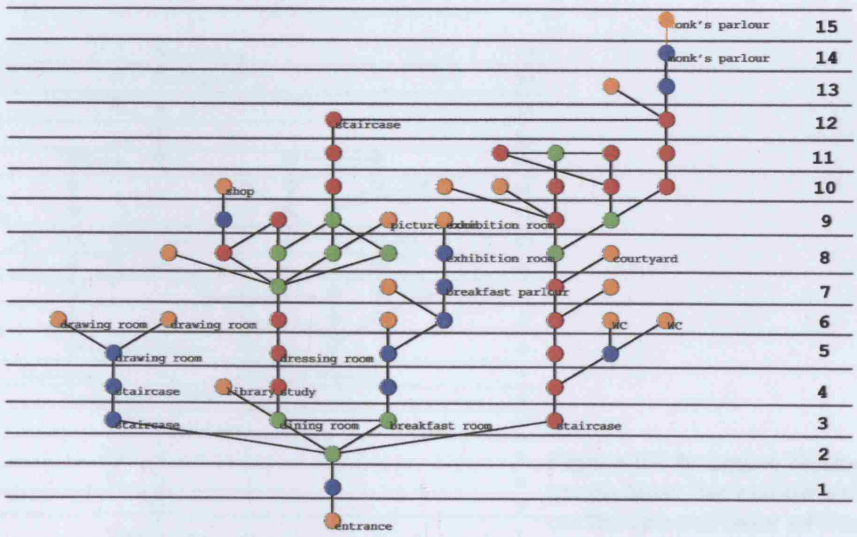
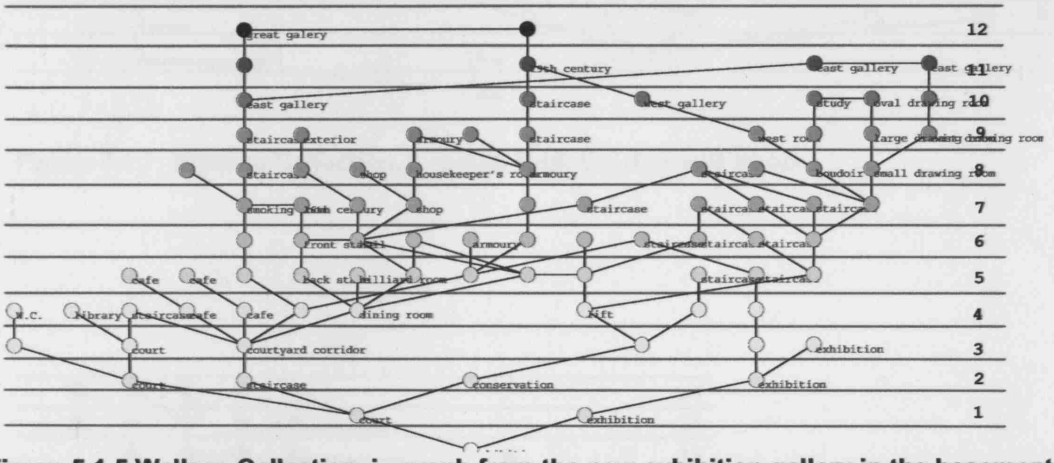


Figure 5.1.4: The Soane Museum, graph justified from the entrance; spaces marked as above.

The following sets of j-graphs give a graphic demonstration of how the structure of the space is different in each museum for spaces with similar function, or with equivalent significance in the layout[8]. Figures 5.1.5 and 5.1.6 present graphs justified from the new exhibition galleries, which in both cases have been added later to the museums, and stand out in the convex integration maps as segregated spaces. In both the cases, the systems are deeper viewed from the new galleries than from the entrance.


great galery
east gallery
staircase exterior
staircase
shop
smoking
front stairs
armoury
cafe
cafe
back st.
billiard room
W.C.
library
staircase
cafe
cafe
dining room
court
courtyard corridor
court
staircase
court
conservation
exhibition
lift
exhibition
exhibition
staircase
staircase
staircase

The j – graphs from the shops reveal that while in the Wallace Collection (fig. 5.1.7) the system has about average depth, almost the same as from the entrance, in the Soane Museum (fig. 5.1.8), the system from the shop is much deeper.

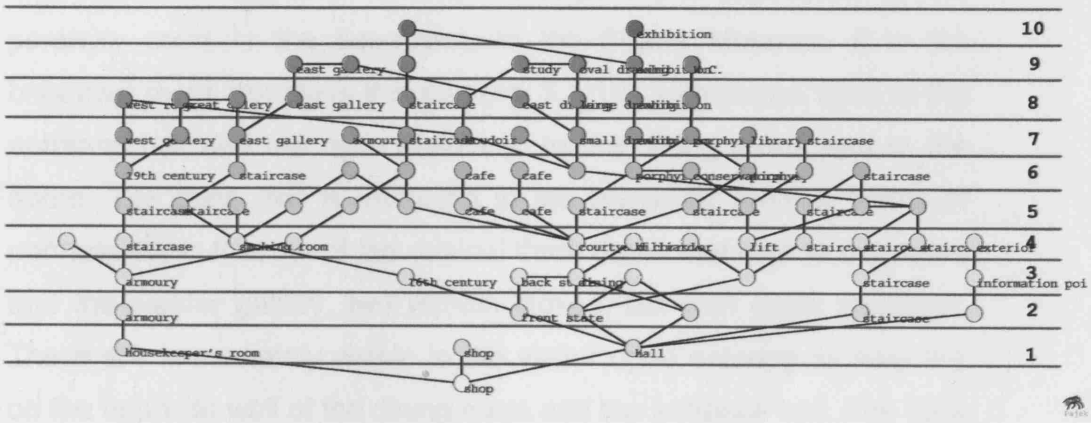


Figure 5.1.7: Wallace Collection, j - graph from the museum shop.

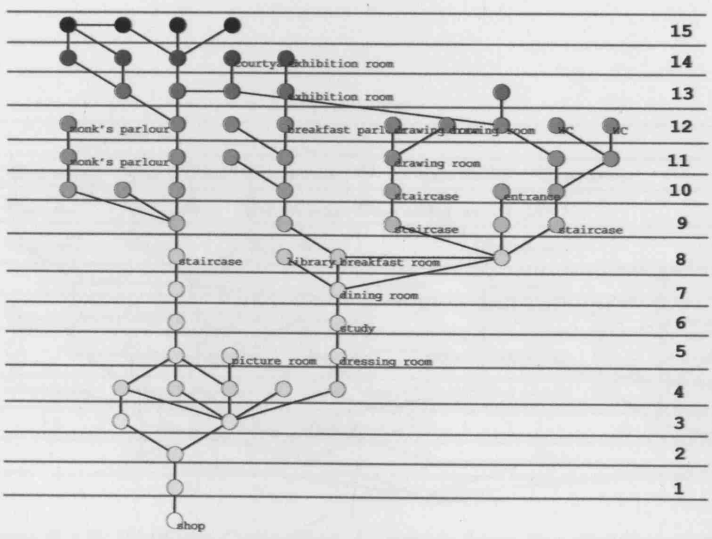


Figure 5.1.8: Soane Museum, j – graph from the museum shop.

The next set of graphs is justified from the most integrated convex space of each museum. In the Wallace Collection, this is the dining room (fig. 5.1.9) on the ground floor, a d – space, a decision point, which distributes movement to the state rooms, the entrance hall and the main staircase, and the courtyard and staircases to the porphyry court in the basement. In the Soane Museum, it is the breakfast room that plays this role (fig. 5.1.10), with connections to the entrance hall and the main staircase, to the dining room, and to the dome. The thing that is intriguing in the breakfast room in terms of permeability is that out of the original three doors that lead to the dome and the plaster gallery, two remain closed, but with glass openings. These are immediately visible to the visitor upon entering as they are on the opposite wall of the dining room and the entrance hall. The door which is actually permeable lies in the left hand corner of the room, not immediately perceivable. It is a d – space with three open doors and another two closed but transparent, and it seems to be where people backtrack and stop in order to figure out where to go next.

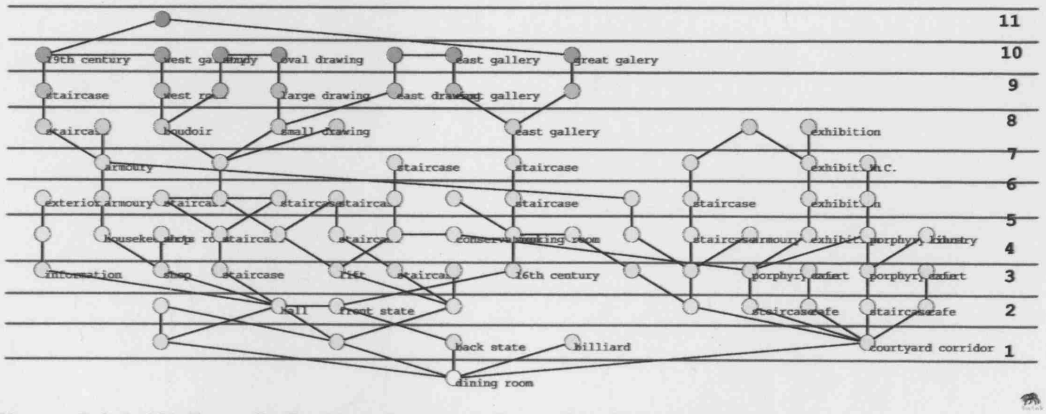


Figure 5.1.9: Wallace Collection, j - graph from the dining room.

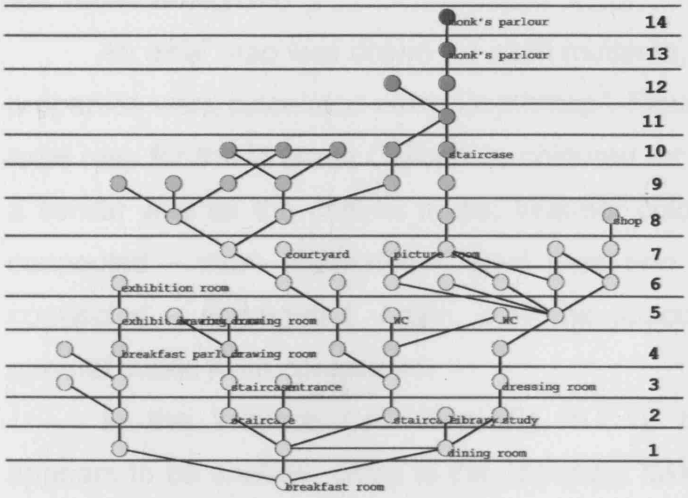


Figure 5.1.10: Soane Museum, j – graph from the breakfast room.

5.2 Axial analysis

An axial map was drawn for each museum,. Then the axial map properties were calculated using Depthmap[9]. Figure 5.2.1 presents the axial map for the Wallace Collection, coloured for integration values in a similar way as the convex maps. Warmer colours represent better connected – more integrated – axial lines and cooler colours, less connected – segregated. Again, only the spaces accessible to the general public were considered.

In the Wallace Collection (fig. 5.2.1), the integration core appears to be shallow, close to the entrance, taking the visitors along the galleries to the left and the right of the entrance. In the Soane Museum (fig. 5.2.2), it is not found immediately, but in the centre of the ground floor, in the areas of the breakfast room, the staircase and the plaster gallery. This means that the visitor has to take some (axial) steps in the building before finding a well connected space that may help him find his way.

[9] Depthmap is a software programme for configurational analysis, developed by A. Turner in UCL.

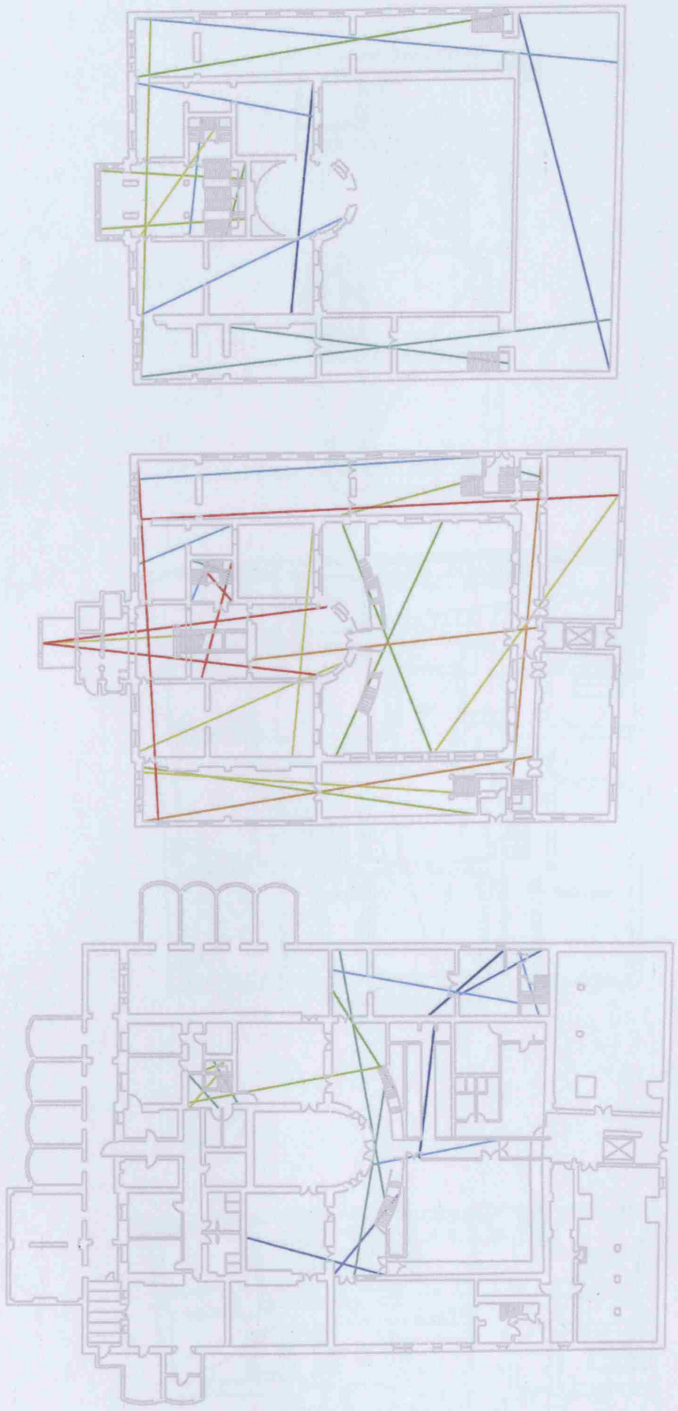


Figure 5.2.1: Wallace Collection axial map; global integration.

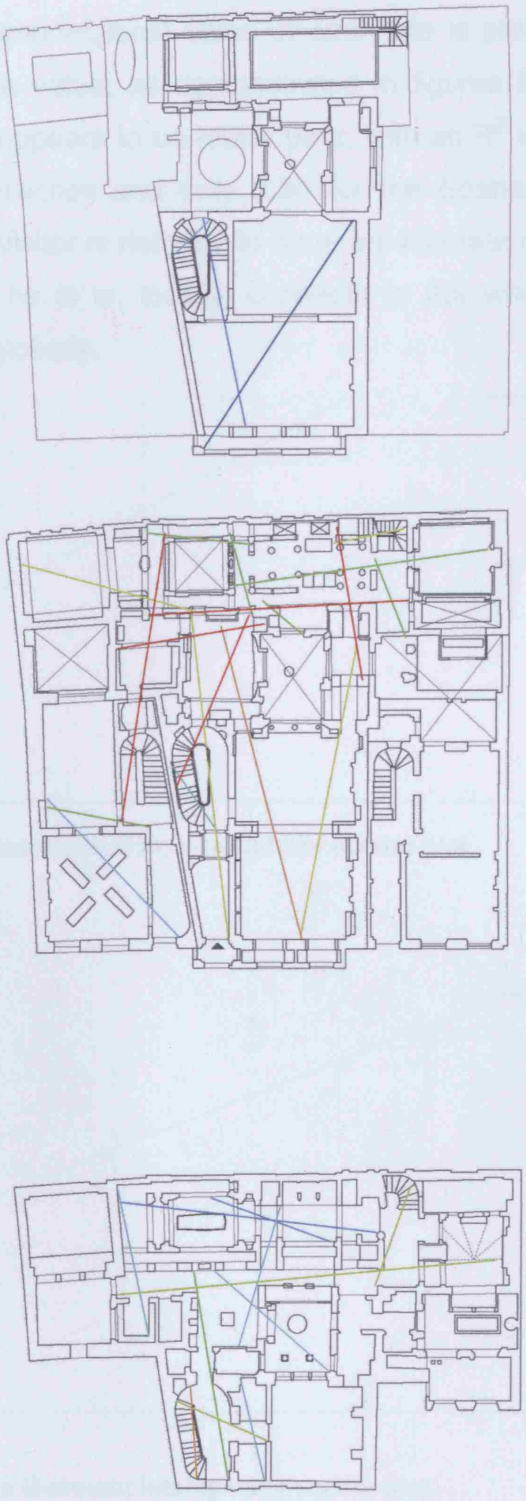


Figure 5.2.2: Soane Museum axial map; global integration.

Intelligibility is an effective way of looking at the relationship between the local and the global scales of a system. The connectivity (i.e. number of connections) value of each line is plotted against the global integration value, as demonstrated in figures 5.2.3 and 5.2.4. The correlation appears to be rather poor, with an R^2 value of 0.43 for the Wallace Collection and only 0.36 for the Soane Museum. This means that the visitor is not able to have an accurate mental image of how the space he is in, locally, connects to the whole system, the entire building, globally.

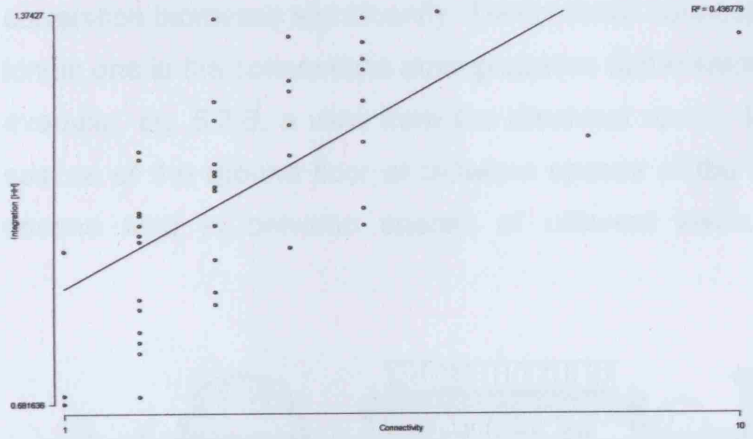


Figure 5.2.3: Wallace Collection; intelligibility scatter plot.

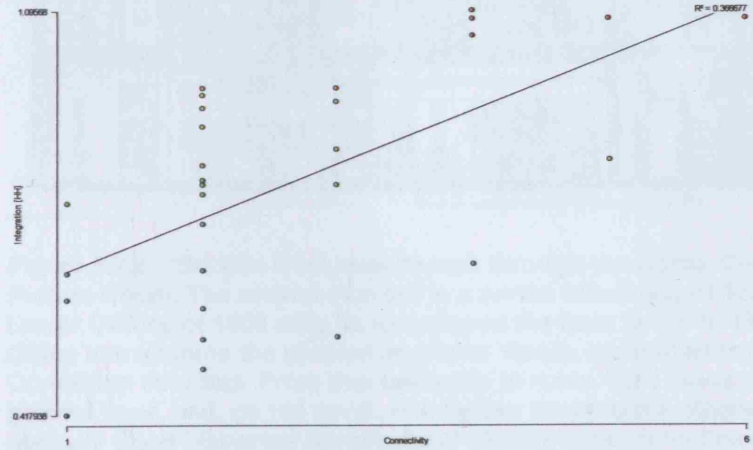


Figure 5.2.4: Soane Museum; intelligibility scatter plot.

In the Soane Museum, however, there is another property of the space that aids the orientation of the visitor, and increases significantly the intelligibility of the configuration as will be shown. In the Soane Museum, there are visual connections between spaces which are not always permeable. It is proposed that the visitor uses these in order to navigate in space. This is the reason why there is more backtracking observed here than in the Wallace Collection, as the visitor reaches points of greater visibility in order to gain a better understanding of the space. If these connections are taken into account, the intelligibility correlation increases significantly. These visual connections are of two kinds; one is the connections among spaces at the same level (see, for example, fig. 5.2.6, a view from the breakfast room), that is between spaces of the ground floor or between spaces of the basement. The second kind is between spaces of different levels, for example

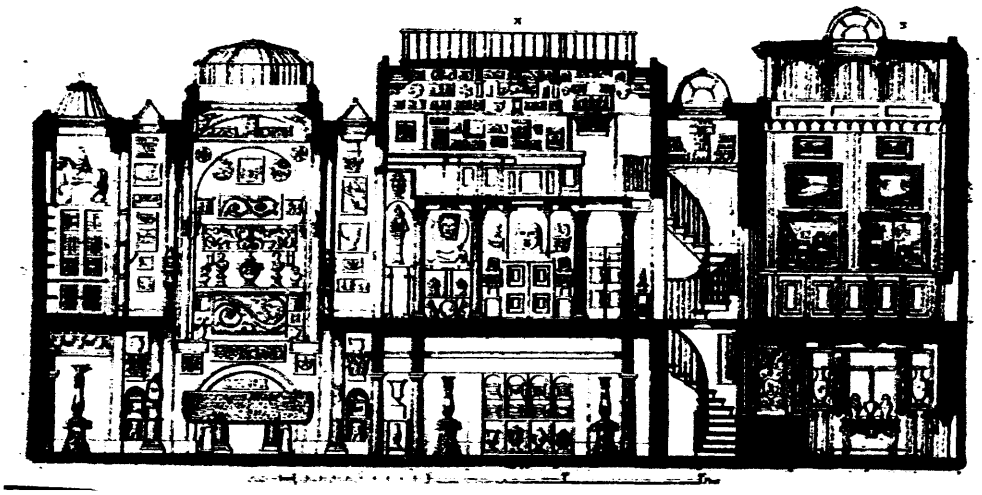


Figure 5.2.5: "Section from west to east through the Dome, Collonade and Picture Room. The central element is a partial rebuilding of Soane's Upper and Lower Offices of 1809 after he had altered the floor levels in 1821. The Upper Office has become the present Students' Room, supported independently on Corinthian columns. From this brilliantly lit room, light filters down to the ground floor, and, on the north, still further down to the otherwise completely obscure Crypt" (source: Architectural Monographs, John Soane, 1983, Academy Editions / St. Martin's Press, London / New York, p. 36)

between the ground floor and the basement at the area around the atrium of the dome (fig. 5.2.8), or between the picture room and monk's parlour, when the mobile panels which hold the pictures are open (fig. 5.2.7). This experience is enhanced by the presence of mirrors, which will be discussed in further detail later on, and of "holes in the floor" covered by grills or protected with railings, which do not really offer visual connections, but allow light and sound to come through (fig. 5.2.9). All of the above increase the awareness of co-presence for the visitors, and their sense of orientation.

A first step towards analyzing the effect of these connections on the visitors understanding of the configuration is to draw a map of visibility lines. These lines are then analysed as if they were axial lines, integration values are attributed to them. Figure 5.2.10 demonstrates this "visibility axial map" where only the connections of spaces on the same level have been taken into consideration. Next, the connections

Figure 5.2.6: View from the breakfast room to the plaster gallery through the glass door. The door on the left is covered with a mirror, giving a view of the adjacent room. (photo by author)

Figure 5.2.7: Visitors standing in the Picture Room and looking down to Monk's Parlour, when the picture panes are opened. (photo by author)

between different levels are also taken into consideration, producing the "3D visibility map" of figure 5.2.11 in the first instance, the strongly integrated lines of each level become the ones which connect the main staircase to the areas around the dome atrium. In the second, the integration shifts to the spaces which provide the views to the largest number of spaces in any level, the dome and the picture room on the ground floor and the corridor running across the basement, from the Monk's Parlour to the Sarcophagus.

It appears to be that the integration pattern initially takes the visitor from the entrance to the breakfast room and then, when the various visual effects start having an effect, they attract the visitors towards the dome or the picture room and subsequently to the basement. This play of views does not extend to the exhibition gallery or the first floor, which always remain segregated, in any way of axial analysis used.

Figure 5.2.8: View from the Sarcophagus in the basement to the Plaster Galleries on the ground floor. (photo by author)

Figure 5.2.9: Hole on the floor, covered with a grill above the staircase that leads from Monk's Parlour to the ground floor. One can just about see other visitors moving around, and recognize part of the Plaster galleries. (photo by author)

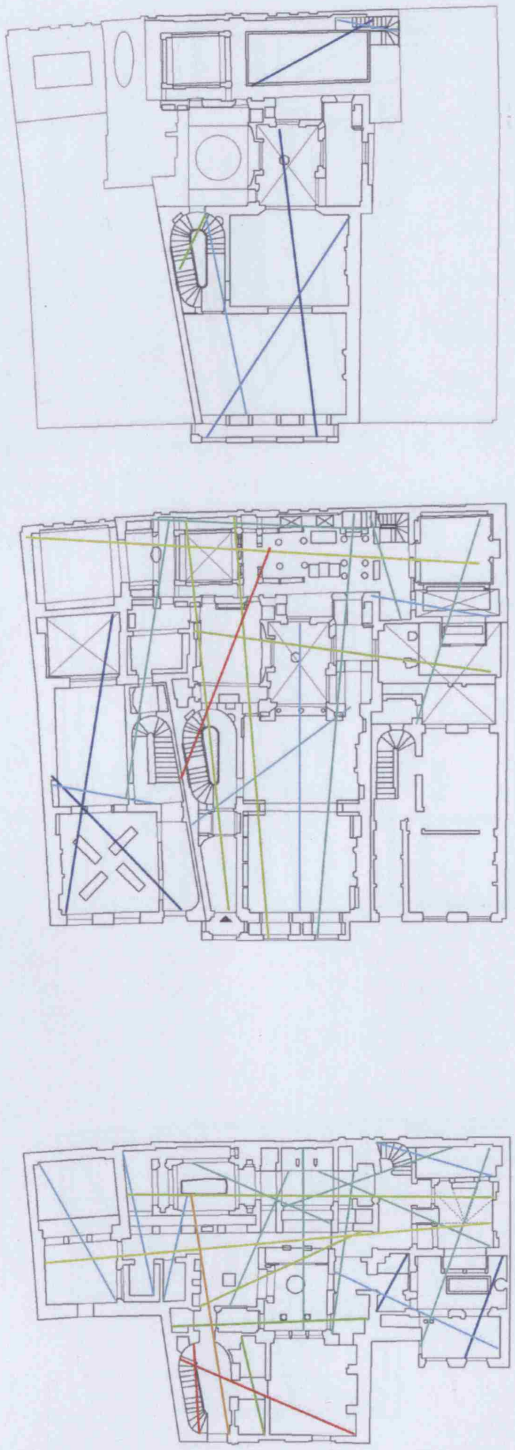


Figure 5.2.10: Soane Museum, "visibility axial map" global integration.

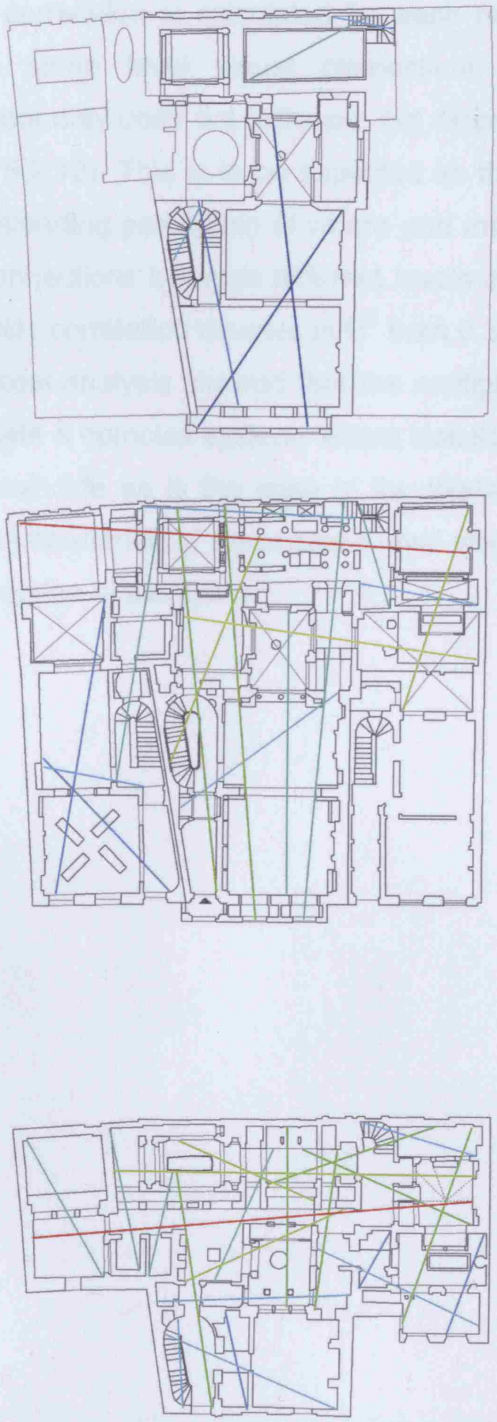


Figure 5.2.11: Soane Museum, "3D axial map" global integration.

The impact of the visual but not necessarily permeable connections in the Soane Museum becomes evident when the intelligibility correlation is calculated for each new set of axial maps. When only same level visual connections are calculated, the intelligibility not only does not increase, but drops slightly from R^2 0.36 to 0.30 (fig. 5.2.12). This is to be expected as those connections tend to give a misleading perception of where one may go. However, when the visual connections between different levels are part of the system, the intelligibility correlation doubles in R^2 from 0.36 to 0.71 (fig. 5.2.13).

The axial analysis showed that the multiple views in the Soane Museum create a complex system, where visibility and permeability do not always coincide as is the case in the Wallace Collection. It also revealed the importance of these cross level visual connections in the visitor's perception of the space.

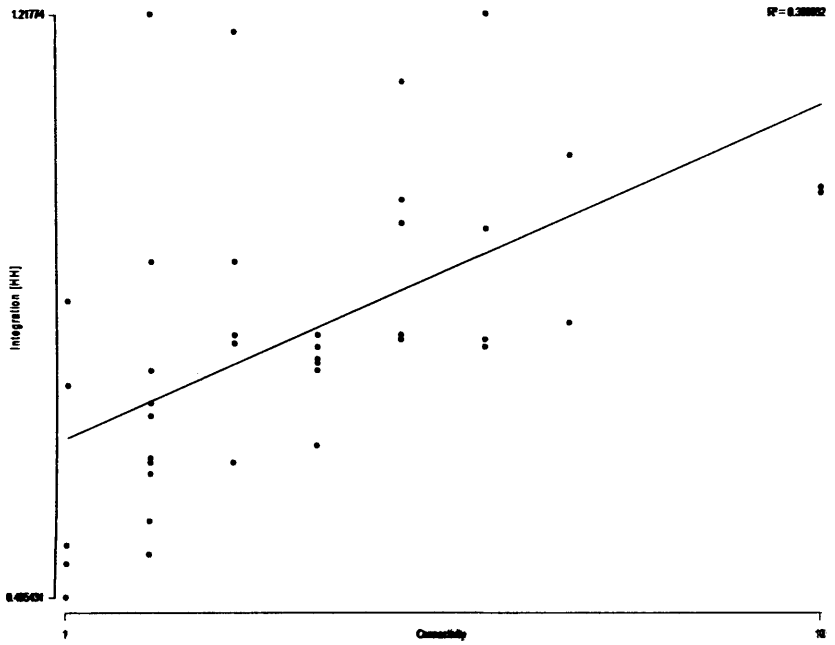


Figure 5.2.12: Intelligibility scatter plot for system of axial lines with same level visual connections.

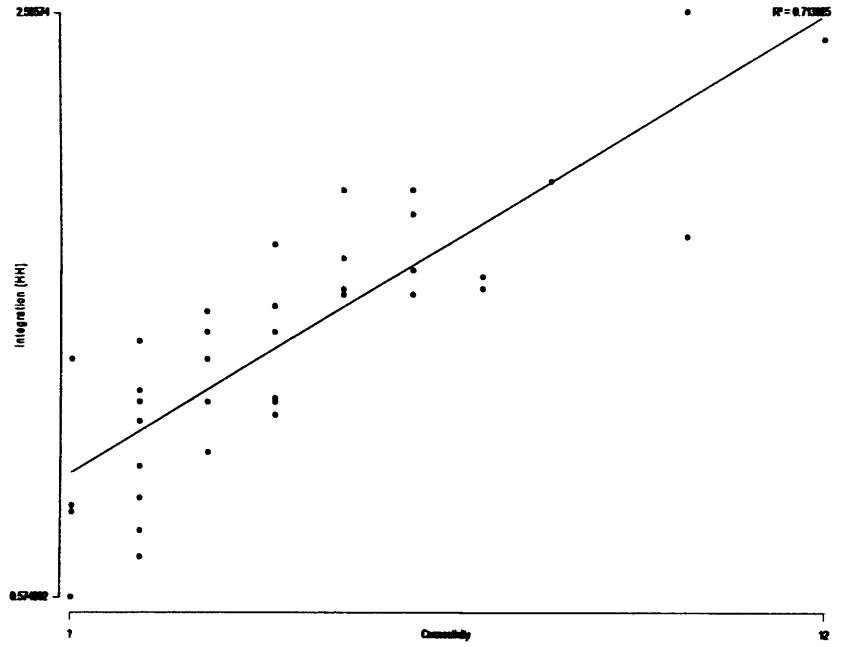


Figure 5.2.13: Intelligibility scatter plot for system of axial lines with visual connections on different levels.

5.3 Visibility analysis

The visual analysis presented in this study consists of a visibility graph analysis (VGA), as described in Chapter 3, and of isovist analysis for each museum. Figure 5.3.1 presents the VGA for integration for the Wallace Collection. The visibility integration core runs on the exterior circulation ring for the ground and the first floors. On the ground floor the integration seems to shift asymmetrically to the east wing, where the oriental and one of the European armoury galleries are located. The passage through the dining room and the courtyard is also picked up by the analysis. The basement remains fairly segregated.

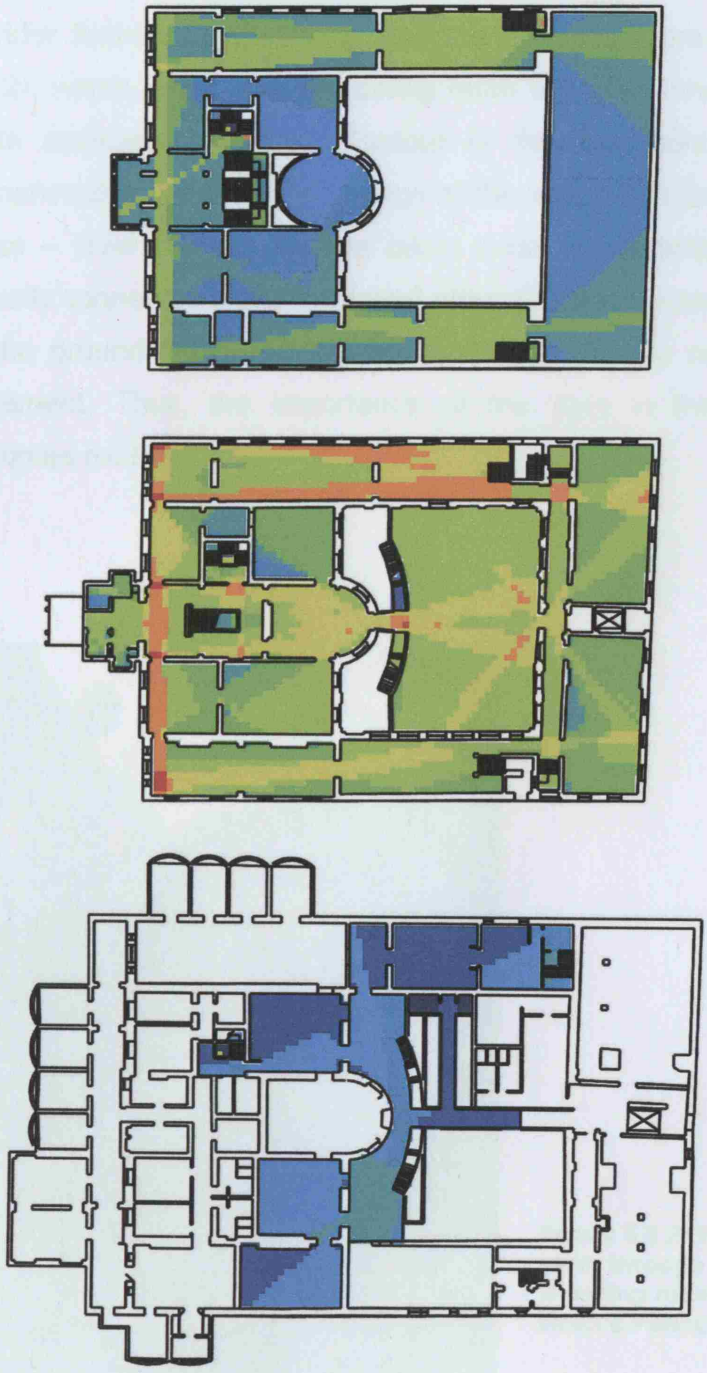


Figure 5.3.1: Wallace Collection, VGA, integration map.

Figure 5.3.3 shows the same kind of analysis for the Soane Museum. Here the best visibly connected area turns out to be the corridor formed by the study and the dressing room (shown in fig. 5.3.2), which leads from the dining room to the picture room and the north staircase to Monk's Parlour in the basement. Figure 5.3.4 demonstrates the dramatic change of the integration pattern when the cross – level connections are taken under consideration[9]. Now, the visually connected areas are found around the dome and the courtyard in the ground floor, and the Sarcophagus and the courtyard in the basement. Thus, the importance of the atria in the configuration becomes evident.

Figure 5.3.2: View from the Dining room through the Study and the Dressing room, to the staircase to Monk's Parlour. (source: author)

[9] The same colour scale was used for the two images, in order for the result to be comparable without the need to resort to tables of integration values.

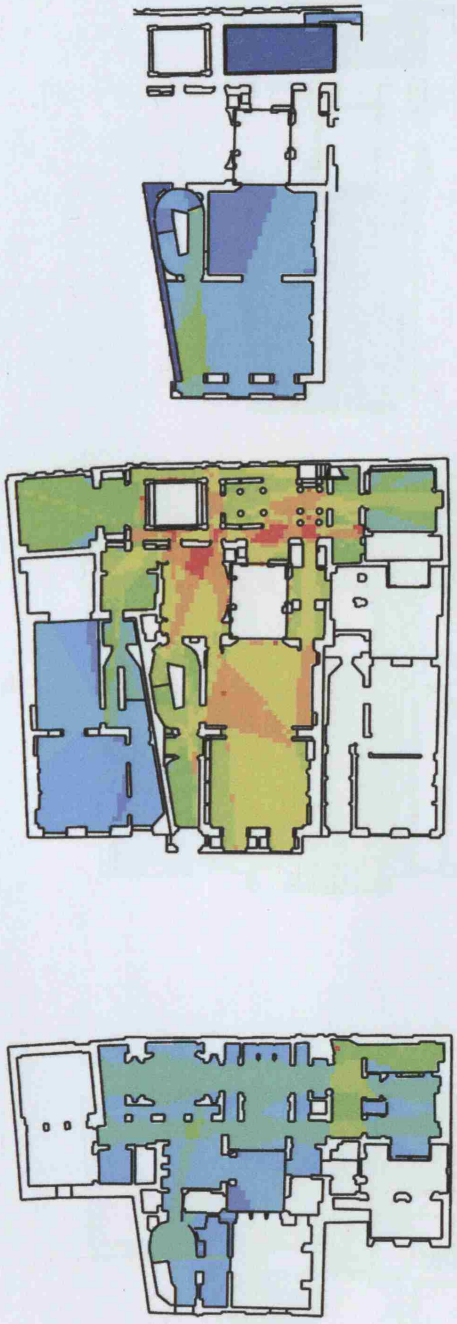


Figure 5.3.3: Soane Museum, VGA, integration map, system with only same level connections.

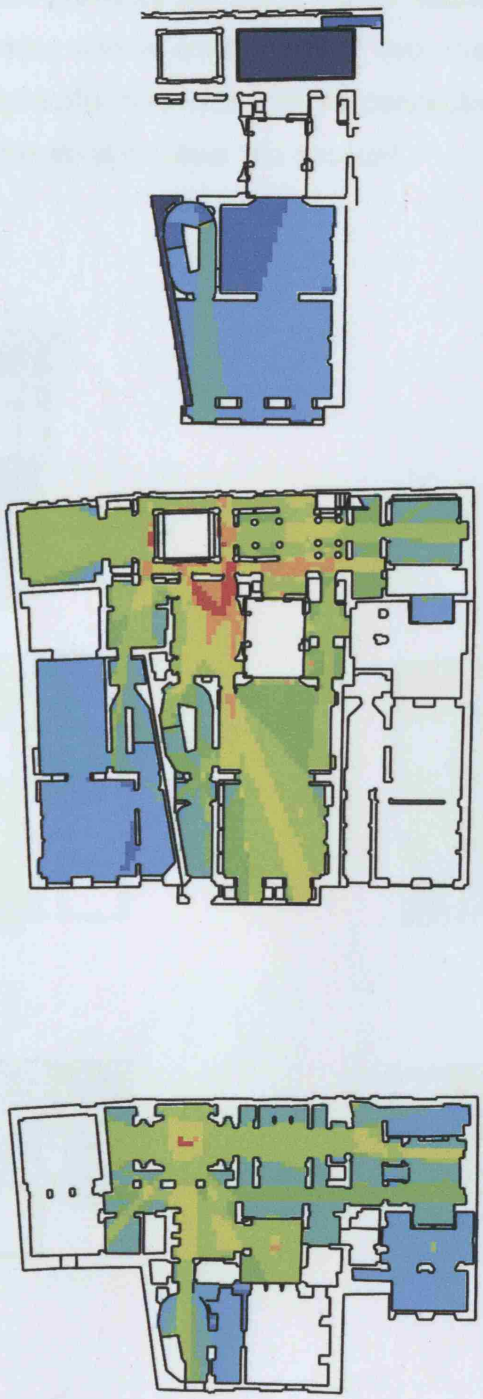


Figure 5.3.4: Soane Museum, VGA, integration map, system with cross – level visual connections.

Figure 5.3.5 presents the same set of maps, with mean depth values in the same colour scale for the two systems, in order to demonstrate graphically how much more connected space becomes when the third dimension is taken into account

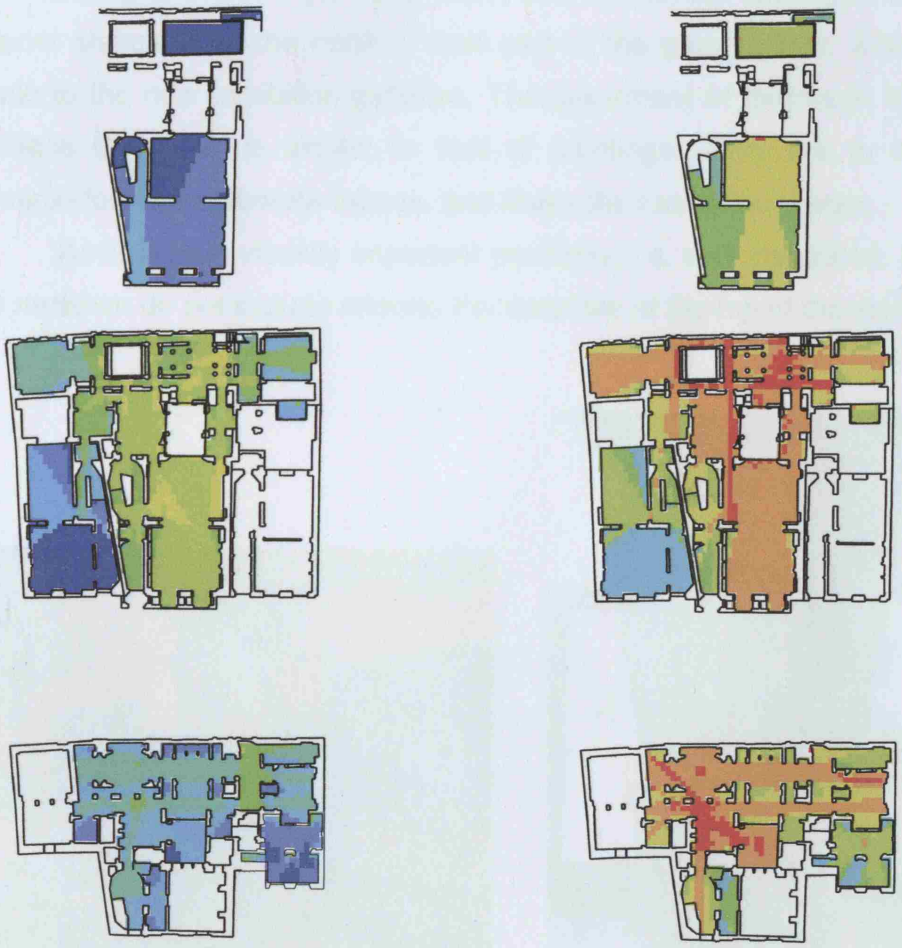


Figure 5.3.5: Soane Museum, VGA, mean depth values in the same colour scale for a two dimensional (left) and a three dimensional (right) system of visibility connections.

The visual effects created by mirrors cannot be analysed with the VGA. One first approach to discussing mirrors is with the use of isovists. In the Wallace Collection, the effect of the mirrors is not integral to the visiting experience. Here, mirrors are found on the wall above fireplaces[10], as seen in fig.5.3.6. The only three mirrors that stray from this rule are two in the Dining room, on either sides of the door leading to the courtyard (fig. 5.3.7) and one on the landing of the interior staircase on the north – west part of the ground floor, which leads to the new exhibition galleries. The placement of mirrors in the Wallace Collection is similar to that of paintings. They are to be admired for their elaborate frames, and make the rooms look larger.

Isovists from visually important positions, i.e. well integrated, in the museum do not include mirrors. For example at the top of the stairs

Figure 5.3.6: Wallace Collection , view of the back state room, with the fireplace and the mirror above it (source: author).

Figure 5.3.7: Wallace Collection, view of the mirror in the dining room, next to the door leading to the courtyard (source: author).

[10] Perhaps fireplaces were not good places to hang expensive pictures due to the heat. Then, mirrors would be used to cover the empty space on the wall.

on the first floor, as the VGA reveals, is the first encounter of the visitor with the integration core of the floor (fig. 5.3.8) or the 16th century gallery on the ground floor, where two of the longest axial lines of the system cross (fig. 5.3.9) meaning long views across sequences of rooms. The Dining room has different visual rules (figs. 5.3.10 and 5.3.11), as it plays a distribution of movement role, similar to the one of the Breakfast Room in the Soane Museum. Here, there are long views that reach all the way from the entrance across the courtyard. The "mirror isovists", what is visible from that given position through the mirror, marked with grey colour, show that mirrors (marked with orange line) allow not directly visible spaces to be seen.

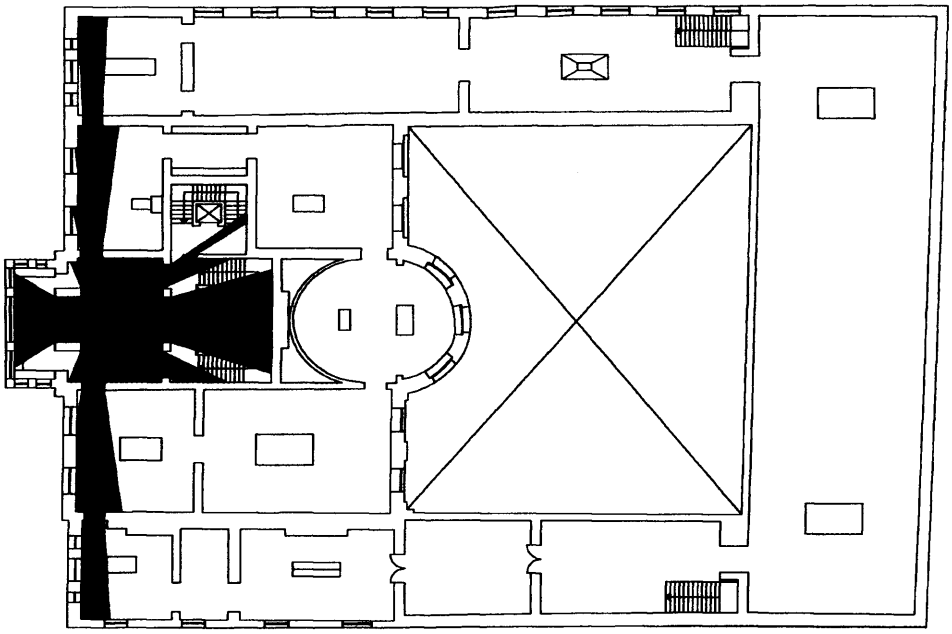


Figure 5.3.8: Wallace Collection, isovist from the top of the stairs.

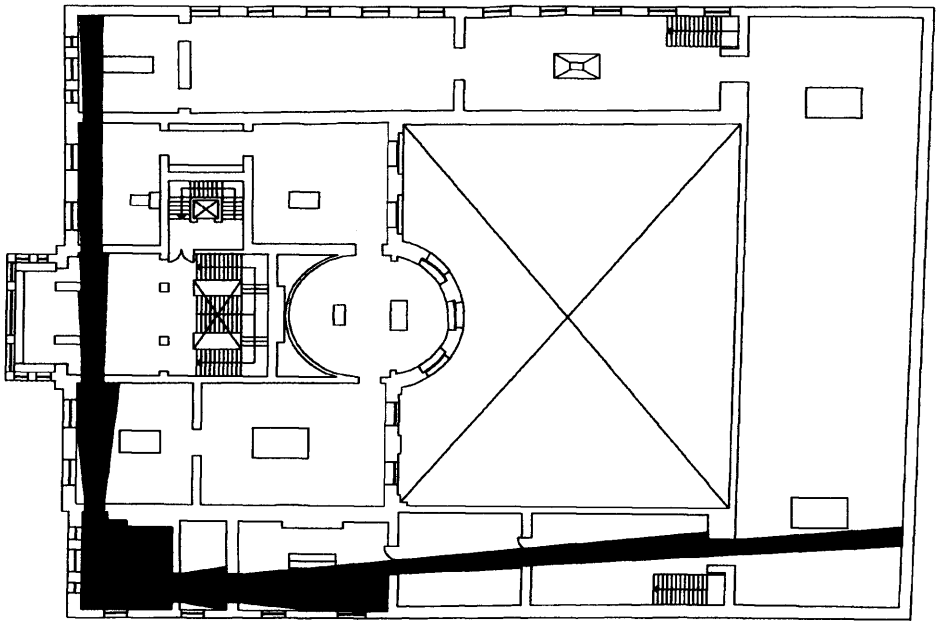


Figure 5.3.9: Wallace Collection, isovist from East Drawing Room on the first floor

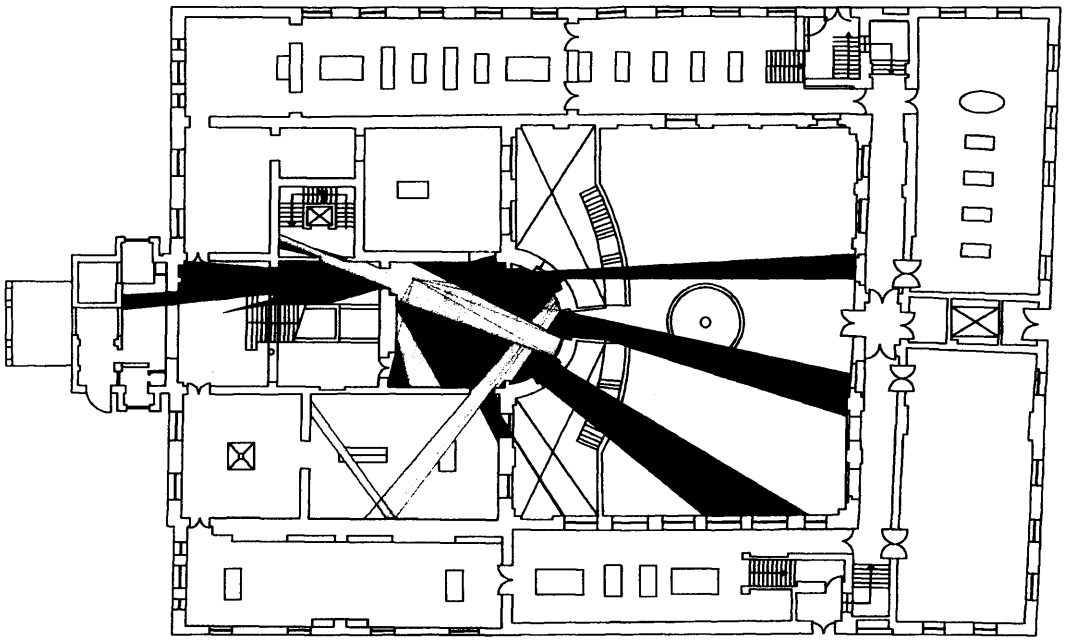


Figure 5.3.10: Wallace Collection, isovist from one point of entrance to the Dining Room.

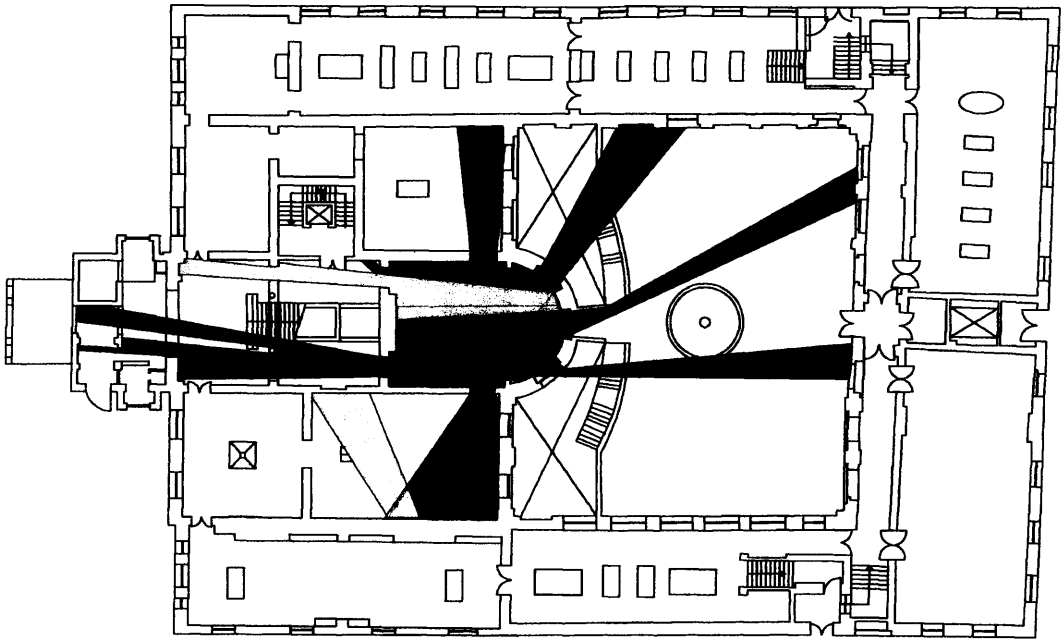


Figure 5.3.11: Wallace Collection, isovist from one point of entrance to the Dining Room.

In the Soane Museum, mirrors play a completely different role. First the different kind of mirrors must be described to give the reader an understanding of their variety and the ingenuity with which they were placed. The mirrors which are immediately obvious are the ones which are placed on eye - level on the walls, or on the doors (figs. 5.3.12, 5.3.131 and 5.3.14). These create the illusion of larger spaces and reflect light as well as the images of objects and visitors. They are placed strategically to increase the spaces from which certain objects are visible. Then, there are the mirrors above or well below eye level, placed on the wall or on furniture, which are used for framing views of objects, like the 5th century BC Greek vase in the Dining room (figs. 5.3.16 and 5.3.17), and for creating illusions, such as the one in figure 5.3.10, where the mirrors above the bookcase give the impression of a secret room behind the wall. Next are the convex mirrors, which function effectively as lighting devices, and are usually found above eye – level (figs. 5.3.13 and 5.3.15). These mirrors are also sources of

Figure 5.3.12: Soane Museum, the east wall of the library , with a mirror over the fireplace, reflecting the bookcasese of the opposite wall, as if filling in the blank, and with mirrors behind the archs, creating the illusion of a hidden room (photo by author).

Figure 5.3.13: Soane Museum, the west wall of the Dining Room, where a portrait is surrounded by mirrors and looks like it is floating. The mirrors reflect Soane's own portrtait. A convex mirror placed above the doorway gives an immediate image of the room behind the observer and, from a different angle, reflects the marble bust on the top left (photo by author).

distorted images of the rooms and the people in them, adding to the awareness of co – presence. Last, there is a type of mirror use in abundance, especially in the Library, the Dining Room and the Breakfast Room. This is the attachment of small strips of mirrors to surfaces of objects or frames, which do not really reflect anything other than random rays of light, making for a vibrant, constantly changing light in the rooms.

Figure 5.3.14: Soane Museum, the corridor connecting the Dressing Room and the Breakfast Room at the Plaster gallery. The long view stops (or rather is extended) with the use of a mirror on a door (photo by author).

Figure 5.3.15: Soane Museum, Breakfast Room, artist's impression giving all the lighting effects: light comes in from the window to the left, from the opening on the dome and from the raised roof at the back; it is reflected on the mirror above the fireplace to the right and on the convex mirrors of the dome (image courtesy of Simon Jones and Associates).

This paper is confined to studying the effects of the first type of mirrors, the flat ones at eye – level, of size adequate to reflect objects. Figures 5.3.18 and 5.3.19 show the isovists from the Library and the Dining Room respectively. Here, the mirror isovists do not extend to many more rooms than the direct ones. The effect of the mirrors is introverting but intense as there are multiple reflections of mirrors in each other. In the breakfast room (figs. 5.3.20-22), the mirrors work to bring in the room views from many spaces which are not directly visible. The isovists have long and thin spikes entering a sequence of rooms.

Figure 5.3.16: Soane Museum, Dining Room. A 5th century BC Greek vase, a possession that Soane was proud of (photo by author).

Figure 5.3.17: Soane moved this table from another room to the wall opposite the dining table and inserted an inclined mirror, so that guests sitting at the table would be able to see the Greek vase in it (photo by author).

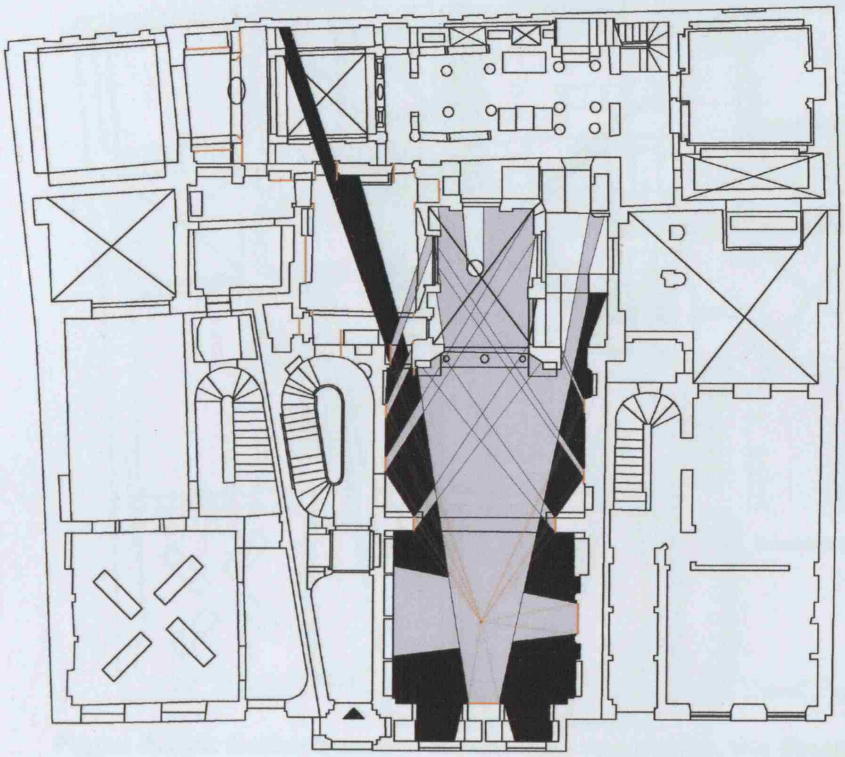


Figure 5.3.18: Soane Museum, isovist from the Library.

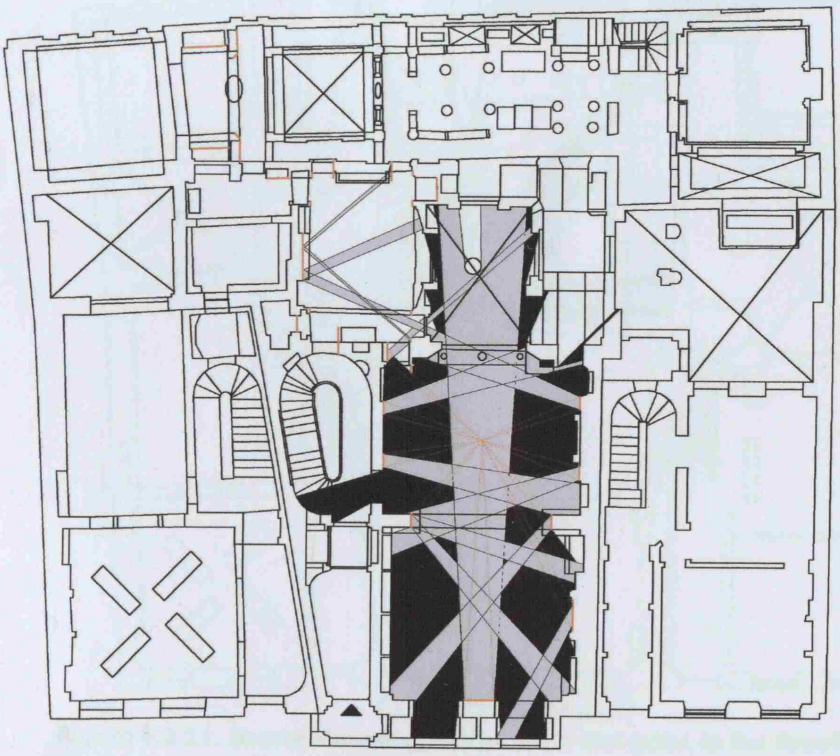


Figure 5.3.19: Soane Museum, isovist from the dining room.

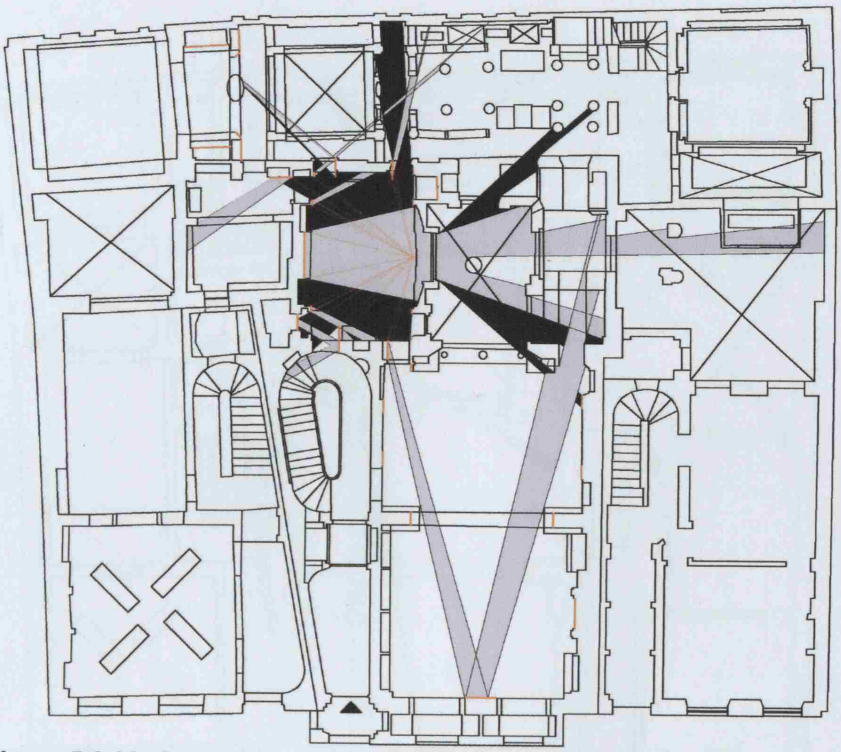


Figure 5.3.20: Soane Museum, isovist from one point in the Breakfast Room

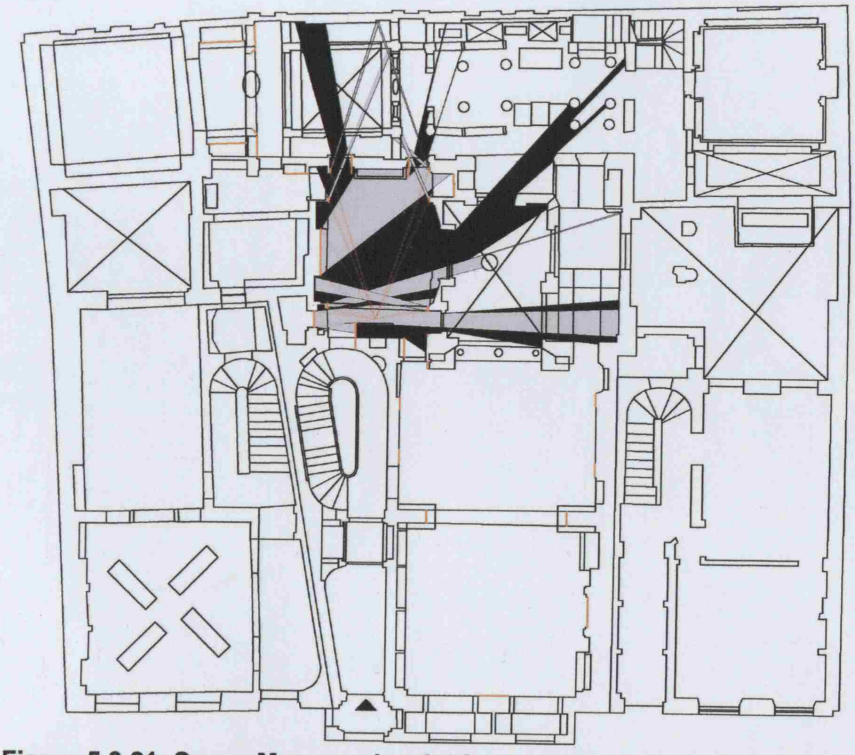


Figure 5.3.21: Soane Museum, isovist from one point in the Breakfast Room

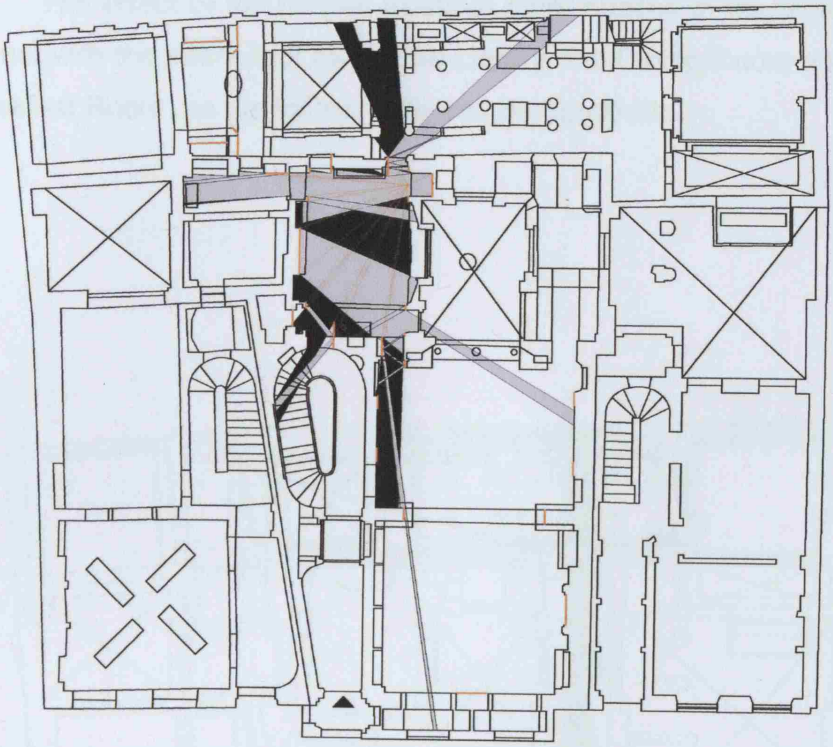


Figure 5.3.22: Soane Museum, isovist from one point in the Breakfast Room

The effect of the mirrors exists in other spaces in the museum, but not with the intensity it has in the Library, the Dining Room and the Breakfast Room, as the following figures demonstrate.

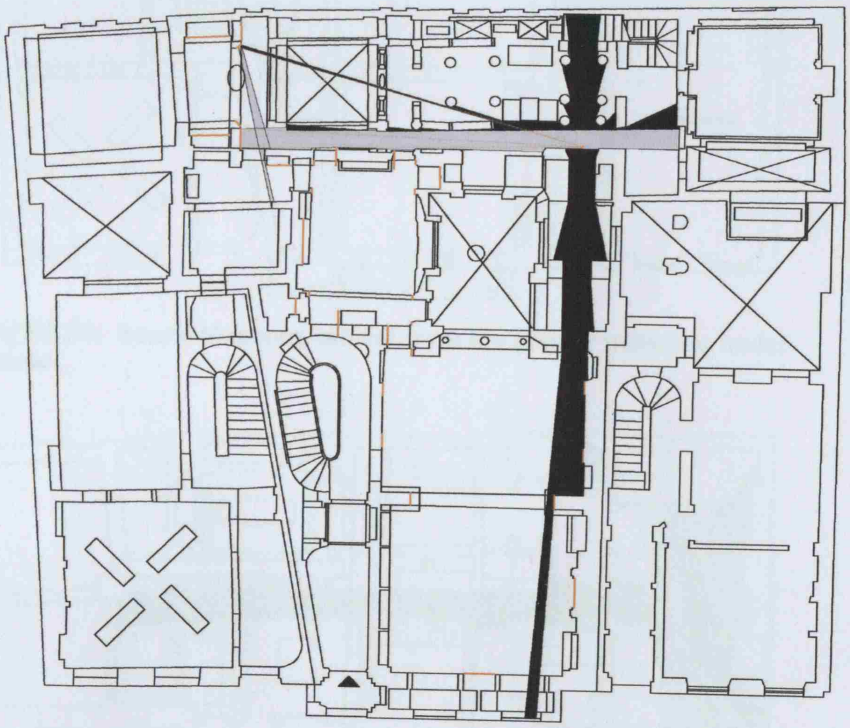


Figure 5.3.23: Soane Museum, isovist from the plaster galleries, in front of the Dressing Room, a point picked up by VGA as strongly integrated.

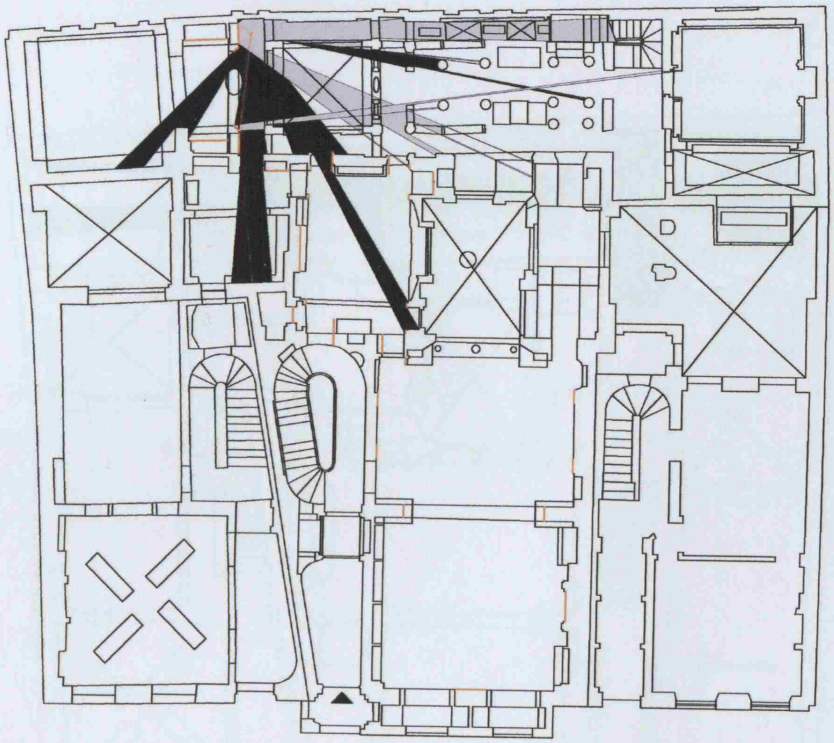


Figure 5.3.24: Soane Museum, isovist from the plaster galleries, under the Dome.

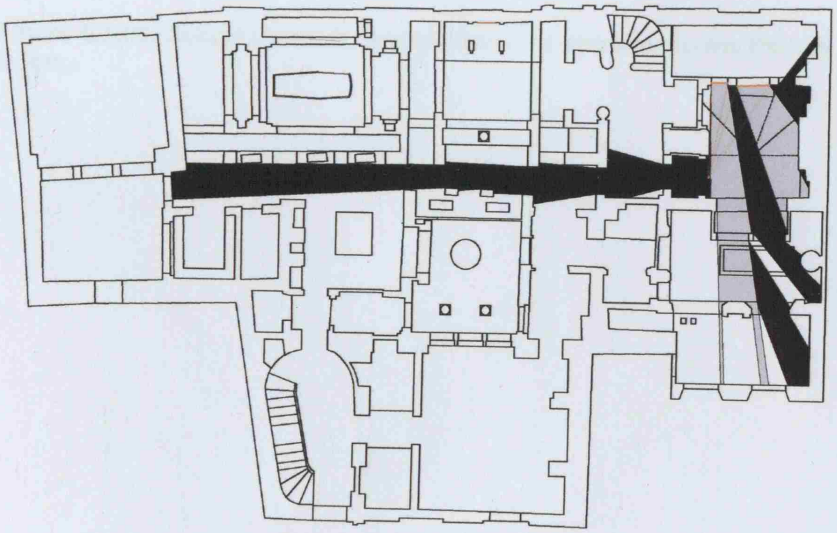


Figure 5.3.25: Soane Museum, isovist from the entrance to Monk's Parlour at the basement.

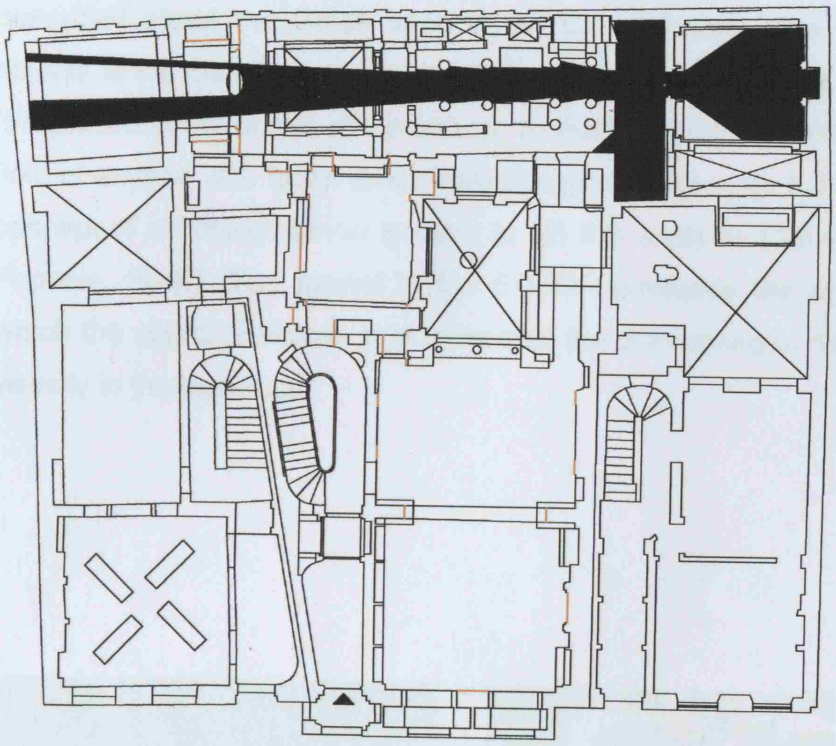


Figure 5.3.26: Soane Museum, isovist from the entrance to the Picture Room.

In the museum, certain mirrors are placed strategically in order to make selected exhibits stand out, in a similar way to the one described about the Greek vase in the Dining Room. One of these objects is the Sarcophagus, in the Crypt of the basement (fig. 5.3.28). It is placed at the centre of the atrium, so that it will dominate the visual field of anyone who looks down from the ground floor (fig. 5.3.27). The concept of an object isovist is used to aid this analysis (Stavroulaki & Peponis, 2005). The isovist in fig. 5.3.29 represents the area from which the object is visible. It is clear that the Sarcophagus dominates visually in the basement.

Figure 5.3.27: Soane Museum, view of the Sarcophagus from the ground floor (photo by author).

Figure 5.3.28: Soane Museum, view of the Sarcophagus on the basement (photo by author).

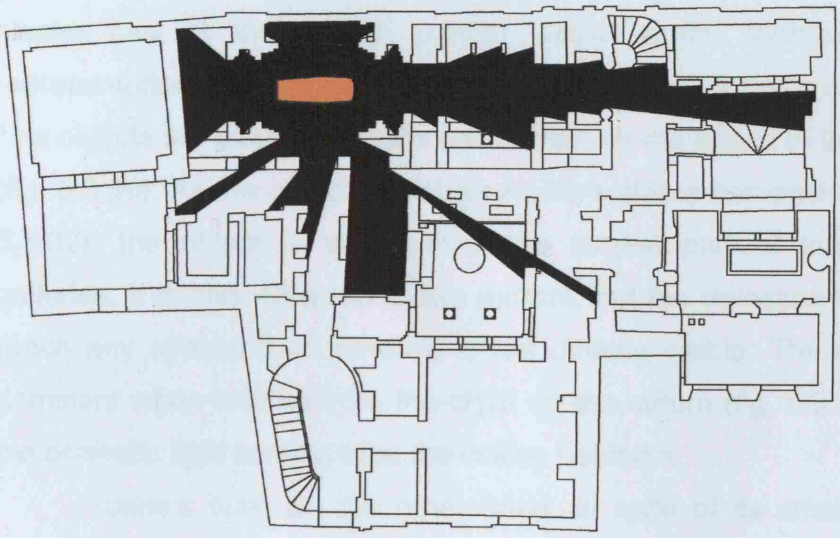


Figure 5.3.29: Soane Museum, object isovist for the Sarcophagus.

Two other objects acquire their significance due to the configuration of space and mirrors around them. Apollo Belvedere, a plaster cast of the original marble statue in the Vatican and a representation of the classical ideal of beauty, and Soane's own bust. The objects are placed opposite each other, on the edges of the atrium (fig. 5.3.30). As the object isovist for Apollo's statue demonstrates (fig. 5.3.32), the object is visible from the largest part of the Plaster galleries. It is only reflected in two mirrors, but the reflection does not reach any spaces from which it is not directly visible. The statue is dominant when looking from the crypt up the atrium (fig. 5.3.31), with the dramatic light coming from the ceiling behind it.

Soane's bust, on the other hand, in spite of its smaller size, taking advantage of the mirror arrangements, is visible in almost all the rooms of the ground floor, as seen in the isovist of fig. 5.3.33. The only rooms with no view to the bust are the later connected rooms of the house in No. 12, and the Dining Room, although when the proper door in the breakfast room is closed, the mirror attached to it reflects the bust to the Dining Room as well. Figures 5.3.34 and 5.3.35 show some of the ways that the bust is reflected in mirrors.

Figure 5.3.30: Soane Museum, Soane's bust in the foreground, and Apollo Belvedere opposite it (photo by author).

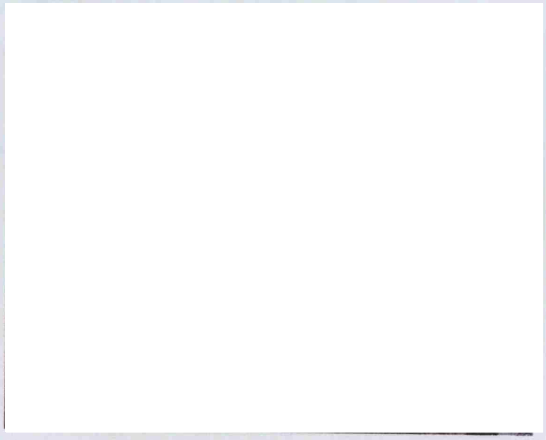


Figure 5.3.31: Soane Museum, statue of Apollo Belvedere, viewed from the Crypt at the basement. A partial reflection is visible at the mirror on the right (photo by author).

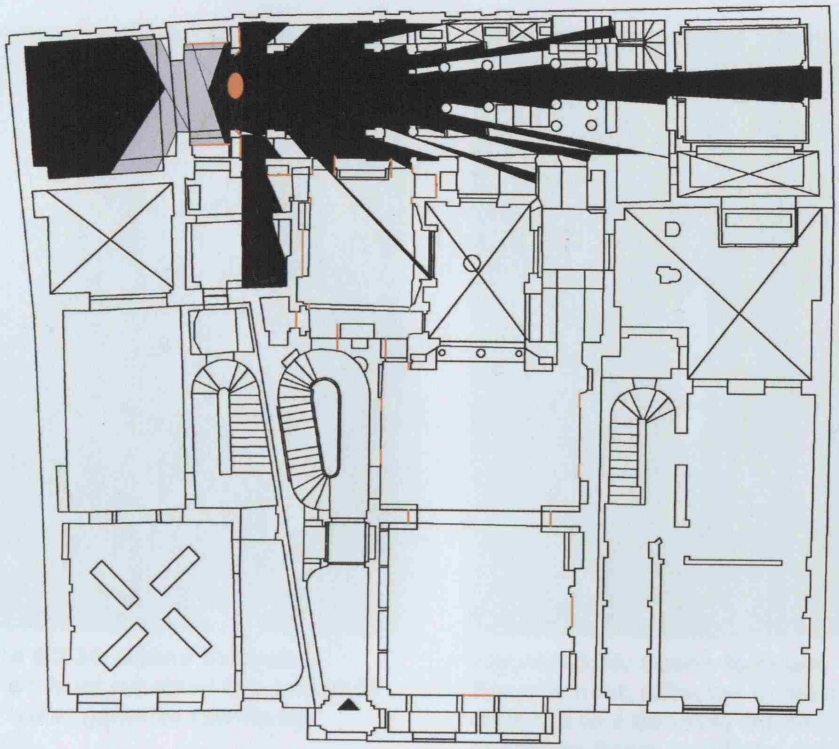


Figure 5.3.32: Soane Museum, object isovist for the statue of Apollo Belvedere.

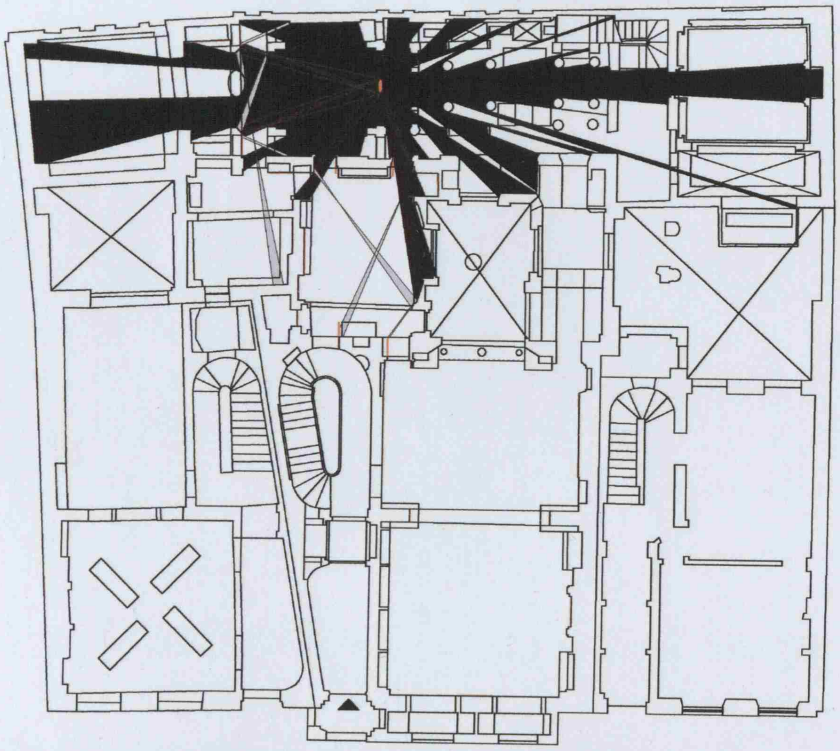


Figure 5.3.33: Soane Museum, object isovist for Soane's bust.

Figure 5.3.34: Soane Museum, Soane's bust reflected in a mirror in the Plaster galleries (photo by author).

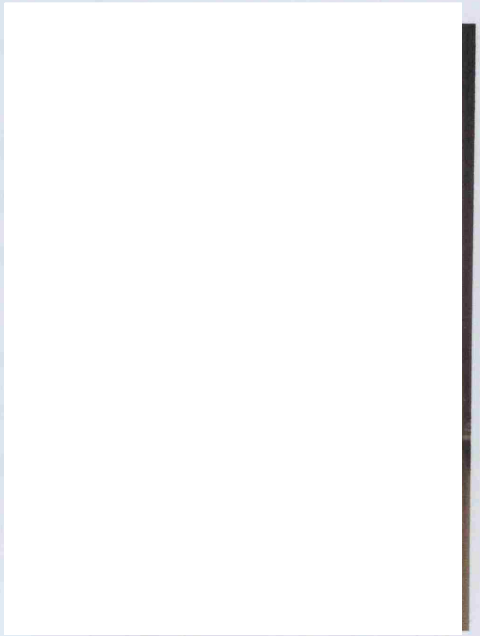


Figure 5.3.35: Soane Museum, Soane's bust, reflected in mirror attached to a doorway frame in the Breakfast Room (photo by author).

The Pasticcio, Soane's monument to architecture, made from architectural fragments is another object with a privileged visual configuration. As seen in its object isovist (fig. 5.3.36), it has received a monumental placement, in the middle of the courtyard, with long axial views along the rooms of the ground floor. The same is true for the basement.

The visual analysis demonstrates the importance of three dimensional visual connections in the Soane museum. The placement of the mirrors plays a significant role in the overall visitor experience, and conveys pedagogic ideas of the narrative. In the Wallace collection, the space is not as dependent on visibility. However, long axial views constitute an integration core which gives a hierarchy to the

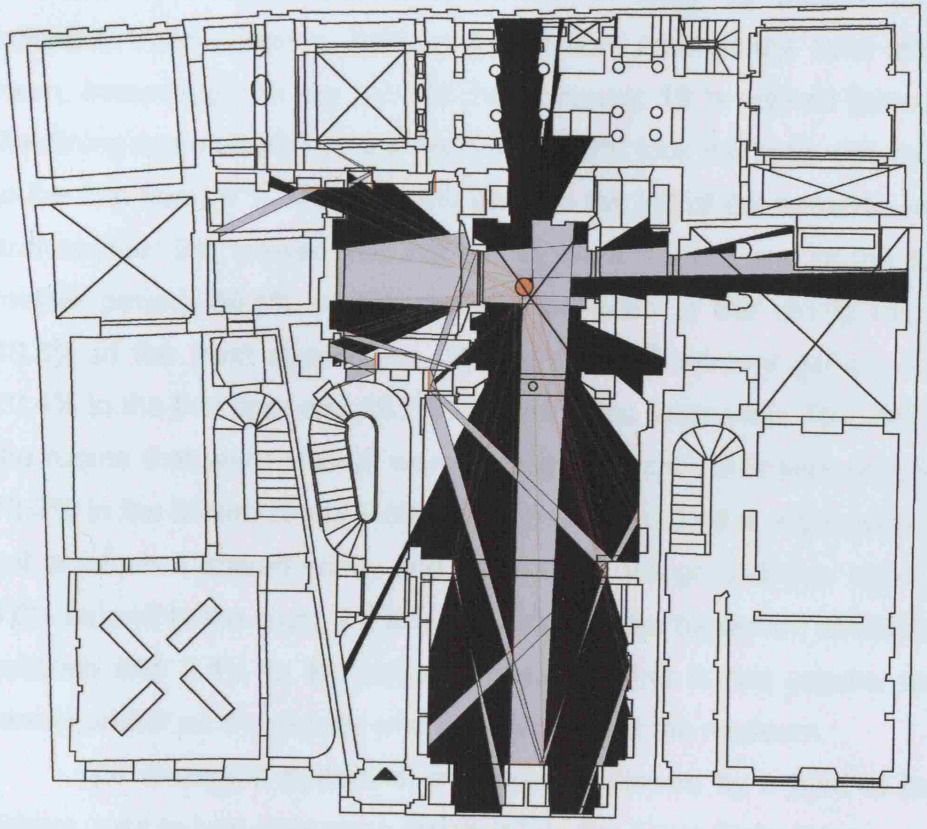


Figure 5.3.36: Soane Museum, object isovist for the Pasticcio.

configuration of spaces, characterized, as the convex analysis demonstrated by large choice of movement. In the Wallace Collection, space is an enfilade of rooms, while in the Soane Museum it is one three – dimensional continuum.

5.4 Observations

The visitor behaviour in the museums was observed with the "snail trail" observation method. Visitors were followed upon entering the museum for ten minutes, and their route and actions such as pausing to orientate, stopping in front of an exhibit, etc, were recorded on plan. Figure 5.4.1 presents a graphic representation of this observation for the Wallace Collection. In total, 83 people were followed. Upon entering, 50% of the visitors entered the front state room, immediately to the right of the entrance; 19 % walked through the dining room directly to the restaurant, 13% took the main staircase to the first floor; 9 % went into the shop to the left of the entrance hall and another 9% walked into the dining room. By the end of the ten minute period, 56.6% of the visitors had been in the dining room, 49.3% in the front state room, 37.3 to the 16th century gallery and 20.4% to the first floor and 19.2% had sat at the restaurant. The rest of the rooms that were visited, were visited by significantly less people; 13.2% in the billiard room, 9.6% to the basement (that is eight people, out of whom 6 stayed briefly and came up to the ground floor again), 9.6% as well to the shop, 7.2% to the annex of the basement exhibition galleries and 2.4% to the armoury galleries, that is two people, the same number as the people who had already left the museum.

The emergent pattern of movement, followed by a third of the visitors, was to turn right upon entering into the Front State Room, and then continue to the 16th century gallery or to the Back State Room and

the Dining Room, or do both of these options. Figures 5.4.1 and 5.4.2 overlay the movement pattern with the VGA and the convex integration map respectively. The correlation of the movement with the convex integration is much higher that the one with the visual integration, which leads to the conclusion that in the Wallace Collection the spatial configuration and the connections between the various spaces are what shape the visitor behaviour it the museum, and not visibility conditions. It must be noted that in the Wallace Collection, the visitors do not receive any directions neither by staff nor by guides about how to move in the rooms, and therefore their behaviour is shaped by the structure of the space without exterior alterations.

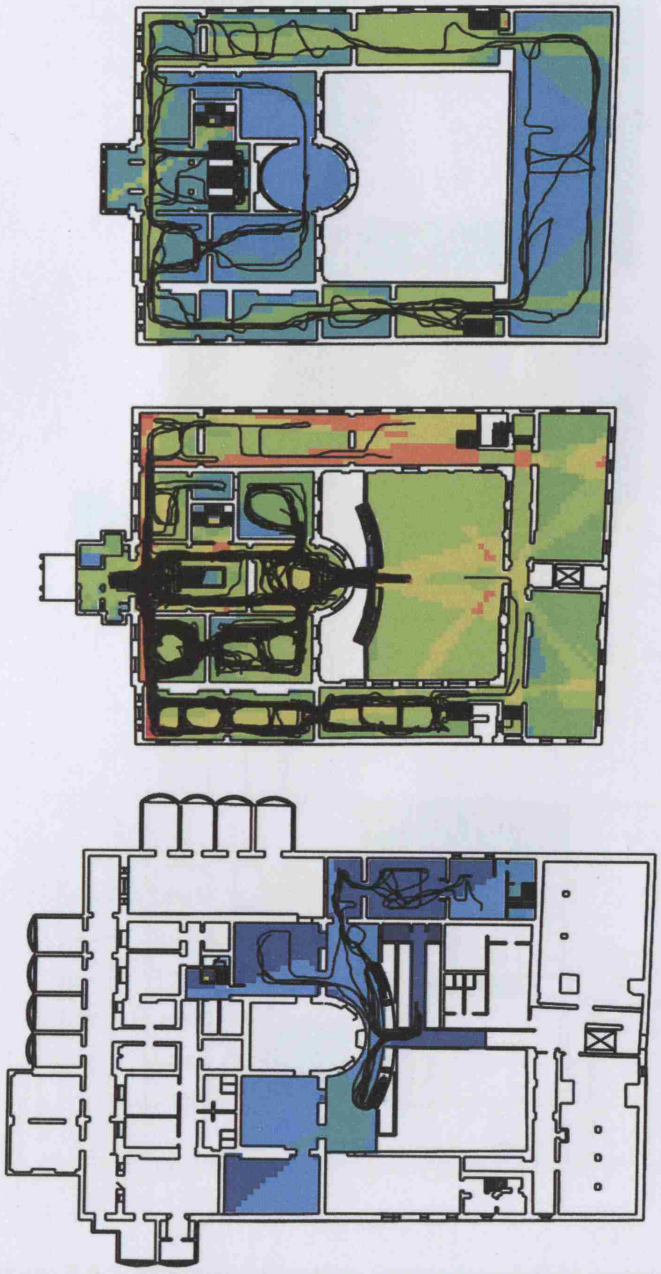


Figure 5.4.1: Wallace Collection, visitor movement pattern for the first ten minutes of their visit, overlayed with VGA.

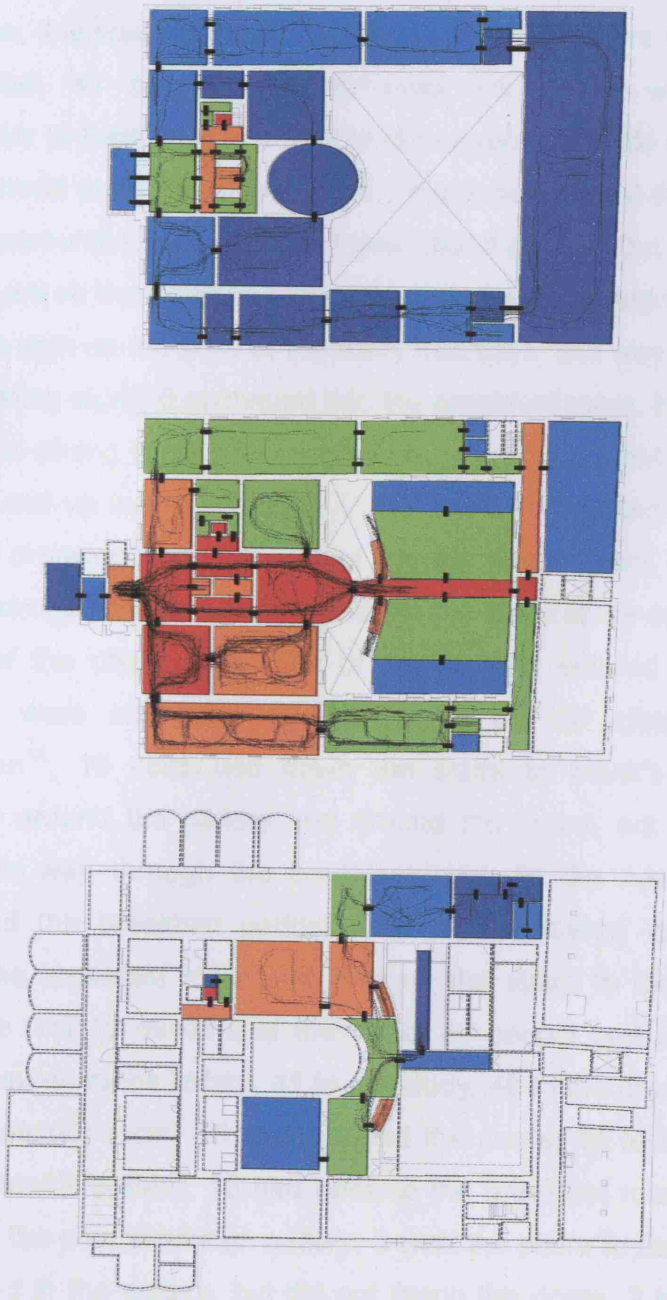


Figure 5.4.2: Wallace Collection, visitor movement pattern for the first ten minutes of their visit, overlayed with convex integration.

In the Soane Museum, the same observation technique was followed. As there is a limit of fifty visitors in the museum at the same time, this was approximately the number of visitors observed. In more detail, 47 people were followed, 46 out of which turned immediately to their right to enter the dining room and did not continue straight ahead to the breakfast room. This is because at the entrance, the staff advise the visitors to start their tour this way. Out of these 46, 39 continued on the proposed route through the study and the dressing room. (the sign on the door of the study that says "this way please" is a strong guiding sign); 6 continued into the breakfast room, but one went back to the dining room and into the study and one went back to the staircase and up to the first floor. Out of the 39 who went through the study and dressing room, 30 walked into the picture room, 7 wandered in the plaster gallery, and two were left in the study at the end of the 10 minutes of the observation. Out of the 30 who entered the picture room, 15 were still there at the end of the 10 minutes of the observation[11], 10 continued down the stairs to monk's parlour, 5 wandered around the gallery and around the dome, out of which 2 found their way through the breakfast room to the new exhibition rooms and the breakfast parlour, and one wondered in the shop, through the breakfast room and then up the stairs to the first floor. During the first 10 minutes of their visit: 46 people had been to the dining room ,44 to the library, 41 to the study, 40 to the dressing room, 30 to the picture room, 16 went around the dome, 14 took the stairs down to monk's parlour, 13 had been to the breakfast room, 6 to the shop, 5 to the new exhibition gallery, 3 took the stairs to the first floor, 2 wondered in the gallery, but did not reach the dome, 2 had already left the building and 1 took the main staircase to the basement.

[11] The panels in the Picture Room are opened by a member of staff when ten to fifteen people are present in the room. Visitors are informed about this and tend to stay in the room and wait to see the panels open.

The emergent pattern of the visitors' movement is to go into the dining room and the library, through the study and the dressing room and then into the picture gallery and down the stairs to monk's parlour, which is the route proposed by the museum guide as well. Figures 5.4.3 and 5.4.4 show the movement patterns on plan, overlayed with the VGA and the convex integration map. The comparison shows that, contrary to what is taking place at the Wallace Collection, in the Soane Museum, the visibility integration is what better correlates with the visitor pattern of movement, and to be precise the VGA which incorporates the third dimension connections into the system.

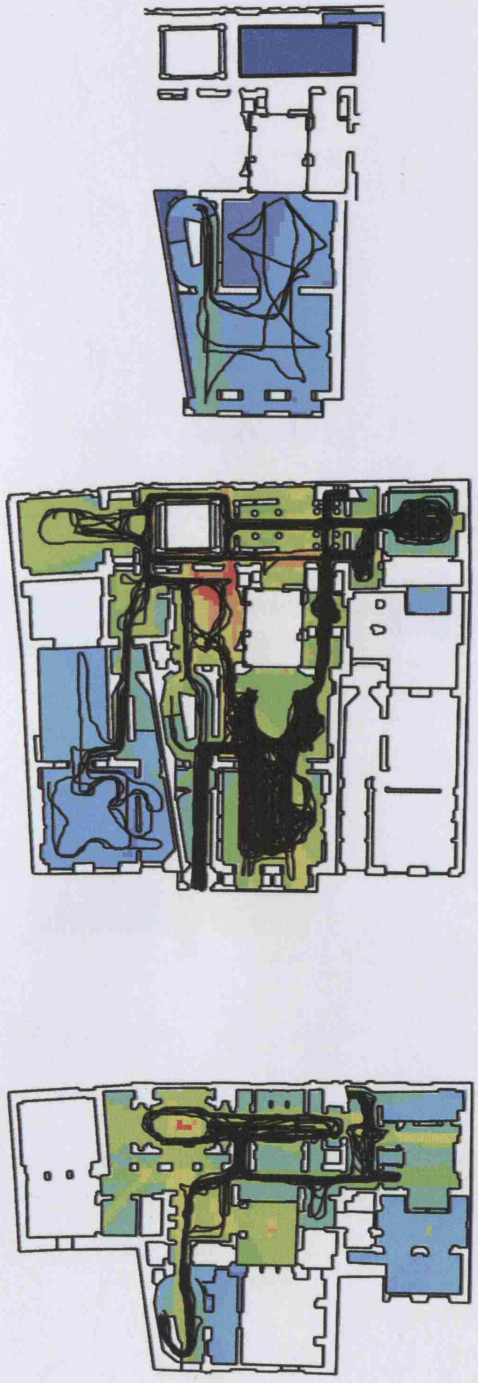


Figure 5.4.3: Soane Museum, visitor movement pattern for the first ten minutes of their visit, overlayed for VGA with three – dimensional connections..

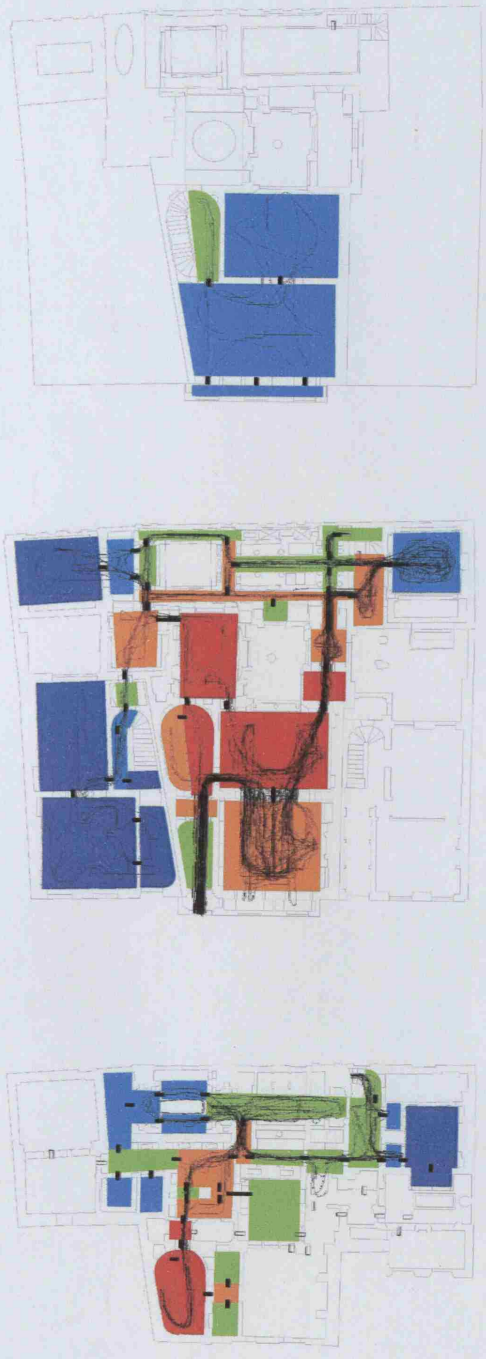


Figure 5.4.4: Soane Museum, visitor movement pattern for the first ten minutes of their visit, overlayed with convex integration.

6. DISCUSSION

This chapter discusses and summarizes the findings of the analysis. It also gives an account of the limitations of the study, and suggest fields for further research.

The aim of this report has been to research how the different visibility potential affects the interface between the visitor and the museum narrative. The case studies, two central London private collection museums were analysed in the space syntax theoretical framework, in terms of spatial and visual configurations. The convex analysis demonstrates how in the Wallace Collection the space provides greater potential for choice of route than in the Soane Museumand the j – graphs show that in the Wallace Collection this large choice of route is related to less sequencing of spaces, while in the Soane Museum the lower potential for choice leads to stronger sequenced spaces. The axial analysis proved the impact of the third dimension visibility connections in the Soane Museum. This has been supported by the visibility analysis, where the importance of visual fields and of the effect of mirrors in the Soane Museum has been displayed.

In terms of narrative, in both the museums sequences of repeated scenes (spaces of smaller size) lead the visitor to larger and different rooms, creating the element of surprise. In the Wallace Collection, items are on display as unique pieces of art, and the visitor is encouraged to move in space, approach and observe them. The narrative and the visitor are two distinct entities. In the Soane Museum, the visitor becomes part of the narrative in two ways; first one always sees oneself in the mirrors, among the exhibits and second, one has to try in order to make cognition of the space, ie understand where they are, if they have been to the room before, and in order to notice

specific objects. This means that the visitor becomes highly engaged in the museum. The element of surprise is stronger here, with unexpected and often unidentifiable views of spaces and objects, which are better understood when the visitor moves to a different room, gets a new view of an object they have already seen before, and put together the mental pieces of a three dimensional visibility puzzle. In both museums the non – linearity of the narrative has to do with the visitor ability to select different routes in space. In this sense, if every time one visits, they pick a different route, they experience a different narrative. What is additional in the Soane Museum is the various visual connections: direct, through openings, windows and glasses; indirect: through mirrors and reflections on glasses; distorted: through convex mirrors. All these add to the element of surprise, as the visitor gets glimpses of people moving where they are not expected to be, and as he discovers new relations between spaces that he did not see the first time. Also, in micro scale: the vast number of objects on display prevents the visitor from being able to see everything. This means that different people will notice, or remember, different objects, or that if one person visits more than once, they will notice different items each time, and have a different experience. It also means that there are always new relations between objects to be revealed. In this context, a few items stand out from the rest, signifying the different co – existing narratives. Apollo Belvedere, for example, as the symbol of the classical beauty, could signify the educational narrative of the exhibition. The co – existing narratives and the existence of sequences that build up the suspense or prepare the visitor for a different space (a change in the plot) in the Soane Museum fit with Barthes' description of the structure of a narrative, which was described in Chapter 2. It would be an interesting experiment to try to identify Barthes' basic units of a narrative with specific spaces or exhibits in the museum, and

examine how these are read vertically and horizontally, as Barthes describes, but that should be the object of a following study.

Overall, this study has demonstrated that the Wallace Collection is a museum which encourages the visitor to *move* around for optimum experience of the exhibition, while the Soane Museum encourages them to *look* around.

The axial and visibility analysis showed that the multiple views in the Soane Museum create a more complex system, for which new tools need to be developed in order to take into account the third dimension. The analysis presented here only begins to touch upon this field. Following the methodology of Stavroulaki and Peponis (2005), discussed briefly in the literature review, one could also take into account the different levels of light in the space, which of course affect visibility. This proves to be a challenging task in the case of the Soane Museum, as the light conditions are a mix of natural and artificial light, and the sources are just as hard to define, with light coming in from windows, the ceiling and lighting devices and being reflected on mirrors and convex mirrors and diffused through stained glasses. Further study on the field would benefit from more detailed analysis of object and mirror isovists, and an exploration of patterns of co – presence in relation to issues of visibility.

References

- Architectural Monographs, John Soane, 1983, Academy Editions / St. Martin's Press, London / New York
- Barthes, R. Image Introduction to the Structural Analysis of Narratives, in Image music text /Roland Barthes ; Essays selected and translated by Stephen Heath. 1977.
- Bennett, T., 1995, The birth of the museum : history, theory, politics, Routledge, London.
- Duncan, C., & Wallach, A., 1980, The Universal Survey Museum, Art History, Vol.3, No. 4, December 1980.
- Duncan, C., 1995, Civilizing Rituals: Inside Public Art Museums, Routledge, London, New York.
- Herman, D., Jahn, M., & Ryan, M.L., (eds), 2005, Routledge encyclopedia of narrative theory, Routledge, London / New York.
- Hillier and Hanson, 1984, The Social Logic of Space, Cambridge University Press, Cambridge.
- Hillier, B., & Tzortzi, K., Space Syntax: The Language of Museum Space, in MacDonald, S., 2006, A Companion to Museum Studies, Blackwel Publishing.
- Millenson, S.F., 1987, Sir John Soane's Museum, Ann Arbor, Michigan, UMI Research Press.
- Peponis, J. & Hedin, J. 1982. 'The layout of Theories in the Natural History Museum' 9H, No 3, pp. 21-5.
- Ryan, M.L., 1991, Possible worlds, artificial intelligence, and narrative theory, University Bloomigton & Indianapolis Press, Indiana.
- Sir John Soane's Museum, a Short Description, Revised October 2006, The Trustees of Sir John Soane's Museum.

- Tzortzi, K., 2004, Building and Exhibition Layout: Sainsbury Wing compared with Castelveccio, Design, ARQ, Vol. 8, No 2, 2004, pp. 128 – 140.

- The Wallace Collection Guidebook, 2003, The Trustees of the Wallace Collection, 4th Edition.

International Space Syntax Symposium Papers, (available in electronic form from http://www.spacesyntax.net/symposia/index.htm):

- Istanbul 2007
  - Antonakaki, T., Lighting and Spatial Structure in Religious Architecture: a comparative study of a Byzantine church and an early Ottoman mosque in the city of Thessaloniki.
  - Penn, A., et al, Structure, Agency and Space in the Emergence of Organisational Culture.
  - Psarra, S., et al, Tracing the Modern: space, narrative and exploration in the Museum of Modern Art, New York.

- Delft 2005
  - Stavroulaki, G., & Peponis, J., Seen in a different light. Icons in Byzantine museums and churches.
  - Tzortzi, K., Kröller-Müller vs Louisiana: alternative explorations of museum experience.

- London 2003:
  - Peponis, J. et al,
    - a. On the Formulation of Spatial Meaning in Architectural Design.
    - b. Path, Theme and Narrative in Open Plan Exhibition Settings.
  - Stavroulaki, G., & Peponis, J., The Spatial Construction of Seeing at Castelvecchio.
  - Tzortzi, K., An Approach of the Microstructure of the Gallery Space: The case of the Sainsbury wing.